ARCHIVES

OF

OPHTHALMOLOGY

124977

EDITED IN ENGLISH AND GERMAN

BY

DR. H. KNAPP
OF NEW YORK

AND

DR. C. SCHWEIGGER
OF BERLIN

DR. W. A. HOLDEN
OF NEW YORK
ASSISTANT EDITOR

VOLUME XXXI.

NEW YORK
G. P. PUTNAM'S SONS, 27 & 29 WEST 23D STREET
AND NEW ROCHELLE, N. Y.
LONDON: 24 BEDFORD STREET, STRAND
WIESBADEN: J. F. BERGMANN'S Verlag
PARIS: J.-B. BAILLIÈRE, 19 Rue Hautefeuille
1902

The Knickerbocker Press, New York

CONTENTS OF VOLUME XXXI.

NUMBER I.

PAGE

1. Case of Embolism (Thrombosis?) of a Branch of the Central Retinal Artery Treated with Forcible Massage. Recovery. By Dr. **A. Barkan,** San Francisco 1

2. Further Clinical Experiences with Haab's Giant Magnet, with Some Experimental Statements Regarding Hirschberg's New Large Hand-Magnet. By Dr. **A. Barkan,** San Francisco 4

3. Clinical Contributions: I.—Papillo-Retinitis Due to Chlorosis. II.—Two Cases in which Eye Strain was Relieved by Vertical Decentration of Lenses. By **Cassius D. Wescott,** M.D., and **Brown Pusey,** M.D., Chicago 18

4. Ciliary Processes in the Pupillary Area. By Dr. **R. Schweigger,** Berlin. Translated by Dr. WARD A. HOLDEN. (With a colored drawing on Plate X. of Vol. XLII., 1–2, German Edition) . . 24

5. Ciliary Processes in the Pupillary Region. By **J. Herbert Fisher,** M.D., B.S. (Lond.), F.R.C.S. 27

6. On Leucæmic Pseudo-Tumors in the Retina. By Dr. **Hugo Feilchenfeld,** Lübeck. Slightly Abridged Translation by Dr. WARD A. HOLDEN. (With two figures on Plate XXII. of Vol. XLI., 1901, German Edition) 29

7. Remarks upon Mr. A. S. Percival's Article upon "Periscopic Lenses" in the ARCHIVES OF OPHTHALMOLOGY, Vol. XXX., No. 5, 1901. By Dr. **F. Ostwalt,** Paris. Translated by Dr. A. DUANE 35

8. Report of the German Ophthalmological Society Meeting at Heidelberg, August 5–7, 1901. By Prof. **R. Greeff.** Abridged Translation by Dr. WARD A. HOLDEN 37

NAGEL: Dichromatic color systems; BACH: Method of examining the pupil, causes of anisocoria, and disturbances of pupillary reaction; BAAS: Unusual pupillary reaction, 37. VON HIPPEL: Pathology of corneal endothelium; HERTEL: Pathological anatomy of cornea; BEST: Presence of glycogen in the eye, 38. LEBER: Phlyctenular inflammation; HESS: New after-image phenomenon, 39. FRANKE: Ocular lepra; HEGG: A stereoscopic ophthalmometer; HESS: Excitation of the retina from increased venous tension; SIEGRIST: Little-known forms of optic-nerve disease, 40. PFALZ: Development of myopic eyes under constant use of full correcting glasses; HEINE: Full correction of myopia; SALZMANN: The choroidal changes in high myopia, 41. URTHOFF: Eye changes following injury of the skull; DIMMER: Photographing the fundus; VOSSIUS: Siderosis bulbi, 42. HUMMELSHEIM: Uniocular diplopia in astigmatic persons; GRUNERT: Lymph passages of the lids; BERNHEIMER: Tobacco-alcohol amblyopia and reflex nystagmus, 43. BERNHEIMER: Reflex nystagmus; RÖMER: Action of iodoform in intraocular infections; EMANUEL: Relation of optic-nerve tumors to elephantiasis neuromatodes, 44.

PAGE

9. Report of the Transactions of the Ophthalmological Society of the United Kingdom, June 13, and October 17, 1901. By Mr. **C. Devereux Marshall** 45

LESLIE BUCHANAN: Inflammatory exudates in the vitreous, 45. MULES: Case of paralysis of third nerve with unusual complications, 46. MULES: Double symmetrical opacities of the cornea; W. H. A. RIVERS: Erythropsia; M. T. YARR: Eye-injury due to lightning, 47; Card specimens by eight members, 48.

Meeting of Oct. 17th.—DAVID LITTLE: Primary chronic glaucoma and the value of iridectomy, 49. S. J. TAYLOR: Rodent ulcer; Card specimens, 50.

10. Report of the Meetings of the Ophthalmological Section of the New York Academy of Medicine, October 21, November 18, and December 16, 1901. By Dr. **Henry H. Tyson,** Secretary . . 52

A. SCHAPRINGER: Amblyopia from inhaling fumes of wood alcohol, 52. SEABROOK: 1—Late infection after cataract extraction; 2—Peculiar neoplasm of conjunctiva, 55. J. E. WEEKS: 1—Restored cul-de-sac; 2—Recovery from penetrating wounds of ciliary body, 55. 3—Neuroma of retina; C. S. BULL: On cases of simple glaucoma in which operation is not advisable, 56. C. J. KIPP: Iridectomy in glaucoma, 57. D. WEBSTER: Sclerotomy, anterior and posterior, for glaucoma, 59. C. W. CUTLER: Sympathetic nerve in glaucoma, Case of excision of ganglion, 62. Dicussion by Callan, Fridenberg, Gruening, H. Knapp, and others, 64. R. DENIG: Conjunctivitis nodosa, microscopic specimen with caterpillar hair; W. W. GILFILLAN: Spontaneous rupture of the globe, probably from hemorrhage, 66. ARNOLD KNAPP: Specimen of tuberculosis of retina; short history of case, 67. H. H. TYSON: Embolism of retina excepting macular branch, 68. H. KNAPP (in discussion): Isolated embolism of macular arteries, 68. N. L. WILSON: Successful case of Mules operation, 69. W. M. LESZYNSKY: Double optic-nerve atrophy and left oculomotor paralysis; E. GRÜNING: Patient, successful discission for excessive myopia; EDW. FRIDENBERG: Another case; Presentation of other cases, 70. M. L. FOSTER: Case of eyelid chancroid, 71. Bibliography, 72.

11. Report of the Meeting of the Ophthalmological Society of the United Kingdom, November, 8, 1901. By Mr. **C. Devereux Marshall** 76

NETTLESHIP: Chronic serpiginous ulcer, 76. W. E. THOMSON: Keratitis in new-born, after instrumental delivery; H. W. DODD: Peculiar new growth of orbit, 79. Presentation of cases. JULER: Retinal pigmentation, congenital; T. COLLINS: Conjunctival thickening, opacity of cornea, notch in lid, congenital; JAMES: Infantile tabes, syphilitic, 3 cases, from the same family, 80; J. H. FISHER: Mooren's ulcer of cornea; Other cases, 81.

12. Systematic Report on the Progress of Ophthalmology in the First Quarter of the Year 1901 (*Concluded*). By Prof. **St. Bernheimer,** at Innsbruck, Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin. With the assistance of Dr. G. Abelsdorff, Berlin; Prof. E. Berger, Paris; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charkow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN 82

A.—Dr. R. SCHWEIGGER. Cornea, sclera, and anterior chamber, 82.

B.—Dr. O. BRECHT. Lens, 84; Iris, 86; Choroid, 88; Vitreous, 90; Glaucoma, 91; Sympathetic ophthalmia, 92.

C.—Prof. R. GREEFF. Retina and functional disturbances, 92; Optic nerve, 95; Injuries, foreign bodies, parasites, 96; Ocular affections in general diseases, 98.

PAGE

13. Book Notices 103

I.—Report of the Cambridge Anthropological Expedition to Torres Straits. By Dr. H. R. W. Rivers.

II.—Traité des tumeurs de l'œil, de l'orbite et des annexes. By Dr. Felix Lagrange.

III.—Stereoscopic Photographic Atlas of the Pathology of the Eye. By Prof. A. Elschnig.

IV.—Contributions to the Comparative Anatomy of the Mammalian Eye, chiefly Based upon Ophthalmoscopic Examination. Part I. By Geo. Lindsay Johnson, M.D., F.R.C.S.

V.—Allgemeine Theorie der monochromatischen Abweichungen und ihre nächsten Ergebnisse für die Ophthalmologie (General Theory of the Monochromatic Aberrations and their Applications in Ophthalmology). By Allvar Gullstrand.

VI.—An American Text-book of Pathology. Edited by Ludwig Hektoen and David Riesman.

14. Obituary 107

Dr. William Fisher Norris.
Prof. Arthur König.

15. Appointments 109

NUMBER 2.

1. On the Protection of the Cornea in Some Sightless Stumps. By **H. Gifford,** M.D., Omaha, Neb. 111

2. A Case of Tumor of the Optic-Nerve Sheath Removed by Krönlein's Method, with Preservation of the Eye and Good Vision. By **F. Antill Pockley,** M.B., C.M., M.R.C.S. (With illustration on Text-plate I.) 114

3. Exophthalmos and Loss of an Eye Due to a Blow on the Temple, in a Patient who was the Subject of the Hemorrhagic Diathesis. By Dr. **Brown Pusey,** Chicago 117

4. The Older and Newer Mydriatics, Myotics, and Anæsthetics in Ophthalmology. By Dr. **H. Schultz,** Assistant. Translated from the *Arch. f. Augenhlk.*, Bd. XL., by Dr. WARD A. HOLDEN 120

5. The Cycloplegic and Mydriatic Actions of Atroscine and I-Scopolamine. By Dr. **Walter F. Macklin,** New York . . . 132

6. A Case of Leuco-Sarcoma of the Choroid. By **Albert B. McKee,** M.D., San Francisco, Cal. (With two illustrations on Text-plate II.) 135

7. A Case of Acute Traumatic Glaucoma without Visible Signs of the Injury. By Dr. **Ed. G. Rust,** Cleveland, Ohio . . . 139

8. Investigations on Eye Magnets. By Dr. **Siegmund Türk,** Berlin. Abridged Translation from *Arch. f. Augenhlk.*, Bd. XLII., by Dr. WARD A. HOLDEN 141

9. Ulcus Rodens Corneæ. By Dr. **Hillemanns,** Duisberg, Germany. (With Plates I.–II. of Vol. XL., German Edition) . . . 148

10. Insufficiency of Divergence as an Etiological Factor in Concomitant Convergent Strabismus; its Importance, Determination, and Treatment. By Dr. **Herbert Wright Wootton,** New York . 156

PAGE

11. Systematic Report on the Progress of Ophthalmology in the Second Quarter of the Year 1901. By Prof. **St. Bernheimer,** at Innsbruck; Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin. With the assistance of Dr. G. Abelsdorff, Berlin; Prof. E. Berger, Paris; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charcow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN 175

A.—Prof. C. HORSTMANN. General ophthalmological literature, 175; General pathology, diagnosis, and therapeutics, 177; Instruments and remedies, 180.

B.—Prof. ST. BERNHEIMER. Anatomy, 181; Physiology, 181; Anomalies of refraction and accommodation, 183; Muscles and nerves, 184.

C.—Dr. R. SCHWEIGGER. Lids, 186; Lachrymal apparatus, 187; Orbit and neighboring cavities, 188; Conjunctiva, 189; Cornea, 193.

D.—Dr. O. BRECHT. Lens, 196; Iris, 199; Choroid, 199 Vitreous, 200; Glaucoma, 200; Sympathetic ophthalmia, 202.

E.—Prof. R. GREEFF. Retina and functional disturbances, 202; Optic nerve, 204; Injuries, foreign bodies, parasites, 207; Ocular affections in general diseases, 207.

12. Miscellaneous Notes 210

NUMBER 3.

1. Gummatous Invasion of the Bone, Skin, Conjunctiva, Retina, and Uveal Tract. Complete and Rapid Recovery. By Dr. **A. Barkan,** San Francisco, Cal. (With an illustration on Text-plate III.) . 211

2. An Eyelash in the Anterior Chamber. Removal. By Dr. **John Dunn,** Richmond, Va. 214

3. Clearing up of Traumatic Cataract. Report of a Case. By Dr. **James J. Mills,** Baltimore 217

4. Some Observations on a Case of Total Color-Blindness. By Prof. **W. A. Nagel,** Freiburg-im-Breisgau. Abridged Translation by Dr. WARD A. HOLDEN, from *Arch. f. Augenh.*, Vol. XLIV., 2. (With three figures in the text) 222

5. A Case of Phlegmon of the Orbit after Extraction of a Tooth. By Dr. **Otto Hallauer.** Translated by Dr. WARD A. HOLDEN from Vol. XXXVII., 3, German Edition, August, 1898 . . 230

6. On the Elastic Tissue in the Human Eye, with Remarks upon the Dilatator Pupillæ Muscle. By Dr. **Kyoji Kiribuchi,** Tokyo. Translated by Dr. WARD A. HOLDEN. (With six figures on Plates VII.–VIII., of Vol. XXXVIII., German Edition) . . 238

7. Report of a Case of Stab Wound in the Occipital Region, Followed by Homonymous Hemiopia. By **Harry Friedenwald,** A.B., M.D , Baltimore, Md. (With a chart of the fields of vision) . 245

PAGE

8. On the Simultaneous Occurrence of Changes in the Retina and Choroid. By Dr. **Josef Haas,** Vienna. Translated by Dr. WARD A. HOLDEN. (With two illustrations in the text) . . 251

9. The Treatment of Corneal Ulcerations with Subconjunctival Injections—Their Value. By Dr. **John Dunn,** Richmond, Va. . 256

10. Reports of Meetings of the Ophthalmological Society of the United Kingdom. By Mr. **C. Devereux Marshall** 263

11. Report of Meetings of the Ophthalmological Section of the New York Academy of Medicine. By Dr. **Henry H. Tyson,** Secretary 272

12. Systematic Report on the Progress of Ophthalmology in the Third Quarter of the Year 1901. By Prof. **St. Bernheimer,** at Innsbruck; Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin. With the assistance of Dr. G. Abelsdorff, Berlin, Prof. E. Berger, Paris, Dr. A. N. Alling, New Haven; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charcow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN 293

A.—Prof. C. HORSTMANN. General ophthalmological literature, 293; General pathology, diagnosis, and therapeutics, 295; Instruments and remedies, 301.

B.—Dr. ABELSDORFF. Anatomy, 302; Physiology, 303; Anomalies of refraction and accommodation, 305; Muscles and nerves, 306.

C.—Dr. R. SCHWEIGGER. Lids, 307; Lachrymal apparatus, 308; Orbit and neighboring cavities, 309; Conjunctiva, 312.

(To be Continued.)

13. Book Notices 317

VII.—Anomalies of Refraction and Diseases of the Eye. By Dr. Flavel B. Tiffany.

VIII.—Ophthalmic Myology: A Systematic Treatise on the Ocular Muscles. By Dr. G. C. Savage.

IX.—Visual Economics, with Rules for Estimation of the Earning Ability after Injuries to the Eyes. By Dr. H. Magnus and Dr. H. V. Würdemann.

X.—A Manual of Ophthalmoscopy. By Dr. J. E. Jennings.

XI.—Neurological Technique. By Irving Hardesty, Ph.D.

XII.—Year Book of Surgery, 1902, volume ii. Edited by G. M. Gould, M.D.

XIII.—The Diagnosis of Nervous and Mental Diseases. By Dr. H. T. Pershing.

XIV.—Leçons de thérapeutique oculaire. By Dr. A. Darier.

NUMBER 4.

1. Primary Sarcoma of the Iris. By Dr. **Casey A. Wood** and Dr. **Brown Pusey,** Chicago (With five appended plates) . . 323

2. A Case of Traumatic Enophthalmos. By Dr. **H. W. Kilburn,** Boston. (With a photographic figure) 384

3. Two Noteworthy Cases of Extraction of Iron from the Vitreous Chamber by Means of the Giant Magnet. A New Procedure. By Dr. **Charles J. Kipp,** Newark, N. J. 391

PAGE

4. A Case of Blennorrhœa of the Lachrymal Sac Caused by the Presence of a Rhinolith. By Dr. **Charles J. Kipp,** Newark, N. J. 394

5. A Case of Streptothrix in the Lower Canaliculus. By Dr. **Charles J. Kipp,** Newark, N. J. 395

6. Ophthalmological Society of the United Kingdom. Clinical Evening, May 1, 1902. By **C. Devereux Marshall,** F.R.C.S. . . 399

7. Report of the Meeting of the Ophthalmological Section of the New York Academy of Medicine, Held on Monday Evening, May 19, 1902. By Dr. **Henry H. Tyson,** Secretary 402

8. Systematic Report on the Progress of Ophthalmology in the Third Quarter of the Year 1901. By Prof. **St. Bernheimer,** at Innsbruck; Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin; with the assistance of Dr. G. Abelsdorff, Berlin; Prof. E. Berger, Paris; Dr. A. N. Alling, New Haven, Ct.; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charcow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN. (*Concluded*) 405

A.—Dr. R. SCHWEIGGER. Cornea, sclera, anterior chamber, 405.

B.—Dr. O. BRECHT. Lens, 409; Iris, 411; Choroid, 412; Vitreous, 413; Glaucoma, 413; Sympathetic ophthalmia, 418.

C.—Prof. GREEFF. Retina and functional disturbances, 419; Optic nerve, 421; Injuries, foreign bodies, parasites, 422; Ocular affections in general diseases, 423.

NUMBER 5.

1. A Case of Metastatic Carcinoma of one Optic Nerve, with Peculiar Degenerations of both Nerves. By Dr. **Ward A. Holden,** New York. (With four figures on Text-plate IV.) 427

2. The purely Anatomical Proof of the Existence of Uncrossed Optic-Nerve Fibres in Man. By Prof. **St. Bernheimer,** Innsbruck. Translated by Dr. WARD A. HOLDEN. (With Plate XI. of Vol. XL., German Edition) 433

3. A Case of Abnormal Tortuousness of the Retinal Vessels. By Dr. **Hugo Levin,** Assistant to Dr. G. Gutmann's Eye Clinic in Berlin. Abridged Translation by Dr. WARD A. HOLDEN. (With Plate XIII. of Vol. XXXVIII., German Edition) 437

4. On the Histology of the Scars Following Posterior Sclerotomy. By Dr. **J. Meller,** Assistant at Prof. E. Fuchs's Eye Clinic in Vienna. Translated by Dr. WARD A. HOLDEN 444

5. The Rôle of Scleral Scars in Operations for Glaucoma. By Dr. **N. Andogsky** and Dr. **P. Selensky,** St. Petersburg. Translated by Dr. WARD A. HOLDEN 450

PAGE

6. Acuteness of Vision and Astigmatism. By Dr. **Adolf Steiger,** Zurich. Abridged Translation from Vol. XLIV., 1901, German Ed., by Dr. WARD A. HOLDEN 460

7. Endarteritis Obliterans Arteriæ Centralis Retinæ Diffusa. By Dr. **J. Markow,** Charcow, Russia. Abridged Translation by Dr. WARD A. HOLDEN 466

8. The Treatment of Corneal Infiltrations by Iodine-Vasogen. By Dr. **Alexander Duane,** New York. (With a text illustration) . 474

9. Albuminuric Retinitis in Syphilis. By Dr. **C. Zimmermann,** Milwaukee, Wis. 480

10. Report of the Ophthalmological Society of the United Kingdom. By Mr. **C. Devereux Marshall** 487

11. Systematic Report on the Progress of Ophthalmology in the Fourth Quarter of the Year 1901. By Prof. **St. Bernheimer,** at Innsbruck; Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin; with the assistance of Dr. G. Abelsdorff, Berlin; Prof. E. Berger, Paris; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charcow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN 493

A.—Prof. HORSTMANN. General ophthalmological literature, 493; General pathology, diagnosis, and therapeutics, 495; Instruments and remedies, 498.

B.—Dr. G. ABELSDORFF. Anatomy, 499; Physiology, 500; Errors of refraction and accommodation, 502; Muscles and nerves, 504.

C.—Dr. R. SCHWEIGGER. Lids, 507; Lachrymal apparatus, 509; Orbit and accessory cavities, 510.

(*To be Continued.*)

NUMBER 6.

1. Congenital Cyst of the Eyeball; Microscopic Examination. By Dr. **Arnold Knapp.** (With five figures on Text-plate V.) . . 515

2. A Case of Hard Chancre of the Upper Lid. By Dr. **Fritz Weber,** Zurich. Translated from *Arch. f. Augenheilk.*, XLIV., by Dr. WARD A. HOLDEN 521

3. Reflex Nystagmus. By Dr. **Carl Bär.** Abridged Translation from *Arch. f. Augenheilk.*, XLV., 1, by Dr. WARD A. HOLDEN. (With one figure in the text) 525

4. A Contribution to Irido-Cyclitis, or Phthisis Bulbi, in Cases of Sarcoma of the Choroid. By Dr. **K. Jarnatowski,** Breslau, Germany. (With one figure on Plate XXIV., of Vol. XXXVIII., German Edition) 533

PAGE

5. Contributions to the Anatomy of the Myopic Eye. External Form, Ciliary Muscle, Optic-Nerve Entrance, Macular Disease, Spontaneously Cured Detachment of the Retina. By Dr. **L. Heine.** Abridged Translation by Dr. WARD A. HOLDEN. (With Plate XVI., of Vol. XXXVIII., German Edition, and 3 figures in the text) 539

6. Case of Chestnut-Bur Thorns in the Cornea; Recovery, Partly by Absorption, Partly by Removal of the Thorns. By Dr. **C. B. Meding,** New York 545

7. On the History of the Theory of Sympathetic Ophthalmia. By Dr. **H. Gifford,** Omaha 547

8. Abstract of Articles in Vol. XXXVII. of the German Edition, not Previously Translated. By Dr. **Colman W. Cutler,** New York 551

I.—The Pathological Formation of New Vessels. By Dr. **M. Straub,** Utrecht 551

II.—Clinical Contributions to the Subject of Ocular Paralyses. By Dr. **Moriz Sachs,** Vienna 552

IV.—A Case of Abnormal Position of the Macula Lutea and Partial Coloboma of the Choroid. By Dr. **Paul Bernhard,** Chur, Switzerland 560

VI.—Bacteriological, Clinical, and Experimental Investigations in Kerato-Conjunctivitis Eczematosa and Conjunctivitis Catarrhalis Simplex. By Dr. **Ludwig Bach** and Dr. **Rudolf Neumann,** Würzburg 562

IX.—Clinical and Experimental Observations in Electrotherapy in Ocular Diseases. By Dr. **Silex,** Berlin 564

X.—Remarks about Central Visual Acuteness. By Dr. **Guillery,** Cologne 566

XX.—A Case of Dislocation of the Lens. By Dr. **C, Ritter,** Bremervörde 566

XXI.—Injury to the Eyes from Dark or Emerald-Green Lamp Shades. By Dr. **George Bonne,** Klein Flottbeck . . 566

XXII.—The Pathogenesis of Congenital Colobomata of the Lids. By Prof. **J. Hoppe,** Cologne 566

9. Abstracts of Papers Read before the American Ophthalmological Society, at its Thirth-eighth Meeting, at New London, Conn., July, 1902 569

10. British Medical Association; Report on its Meeting at Manchester, July and August, 1902. By Mr. **C. Devereux Marshall** . . 587

11. Systematic Report on the Progress of Ophthalmology in the Fourth Quarter of the Year 1900. By Prof. **St. Bernheimer,** at Innsbruck; Dr. **O. Brecht,** Prof. **R. Greeff,** Prof. **C. Horstmann,** and Dr. **R. Schweigger,** in Berlin. With the assistance of Dr. G.

PAGE

Abelsdorff, Berlin; Dr. A. Alling, New Haven; Prof. E. Berger, Paris; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charkow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others. Translated by Dr. WARD A. HOLDEN. (*Concluded*) . 597

A.—Dr. R. SCHWEIGGER. Conjunctiva, 597; Cornea, 600.
B.—Dr. O. BRECHT. Lens, 603; Iris, 604; Choroid, 605; Vitreous, 606; Glaucoma, 606; Sympathetic ophthalmia, 609.
C.—Dr. v. HASLBERG. Retina and functional disturbances, 609; Optic nerve, 611; Injuries, foreign bodies, parasites, 613; Ocular affections in general diseases, 614.

12. Book Notices 616

XV.—Diseases of the Eye. By G. E. De Schweinitz.
XVI.—Manual of Diseases of the Eye. By Chas. H. May.
XVII.—Graefe-Saemisch's Handbuch der gesammten Augenheilkunde.

13. Obituary 619

Dr. Richard Förster.
Dr. Edouard Meyer.
Dr. Arthur T. Muzzy.
Dr. Owen Day Pomeroy.
Dr. Aaron Friedenwald.

14. Appointments and News 621

15. Index to Authors and Subjects of Vol. XXXI 623

ARCHIVES OF OPHTHALMOLOGY.

CASE OF EMBOLISM (THROMBOSIS?) OF A BRANCH OF THE CENTRAL RETINAL ARTERY TREATED WITH FORCIBLE MASSAGE. RECOVERY.

By Dr. A. BARKAN, San Francisco.

T. E. K., aged thirty-eight, single. Had ulcus molle six years ago, which healed without secondaries. Until last June attended to his professional duties, training horses and driving at the race track; but on account of mitral affection had been obliged to give up active work for the last year and a half, though being about, and taking life easy.

On the morning of November 17th, having suffered for several days from a slight bilious attack, he was sitting down quietly. He then noticed a cloud before the right eye which he tried to rub away with his hand. Towards evening the cloud had thickened, but there was no pain or discomfort otherwise; passed a restful night; the next morning the cloud seemed thicker, continuing to increase all day, so that on Friday morning, forty-eight hours from the time the trouble was first noticed, his sight had decreased so that he could not, with this eye alone, find his way about. There was a slight headache. On the evening of that day, I saw him for the first time.

Condition on examination: Man of nervous temperament, rather poorly nourished, though wiry. Eyes move well in every direction; hardly any reaction of the right pupil to light; fingers in strong light not discerned in front of the eye; motions of the hand recognized on extreme temporal side only. Fine dust-like opacities in the vitreous. Fundus clearly visible. Disc well defined, not raised, ceasing with sharp outlines toward retina, except downward and inward, where it was hazy. The inferior nasal branch of the central retinal artery was seen to have abruptly ceased at about one half the distance between the centre and

edge of disc, as if torn off. Beyond that point the vessel was of thread-like appearance, very pale and hardly visible. The surrounding part of the retina into and beyond the macula was of grayish-white color in quite a large circumference. The macula itself was cherry-red. There were no hemorrhages anywhere. As there had been no premonitory or passing attack of blindness in that or the other eye and, as all the other branches of both retinal arteries and veins appeared perfectly normal, diagnosis of embolism of branch of the central retinal artery could, I thought, be made with exclusion of thrombotic origin of the trouble. The patient was taken to the hospital and put to bed. Twice that evening severe massage was used: the patient having closed his eyes, the thumbs of each of my hands were squarely applied over the front of the right eye, and with a pressure at first gentle and then quickly increasing to quite an intense degree, the patient being just able to stand it, the eyeball was pressed palpably back into the orbit. The pressure was maintained for half a minute exactly, then it was suddenly released, thus damming up the blood at first in the rear of the eye and then flushing the circulatory currents of the eyeball with increased force. This massage was repeated two hours afterward for half a minute. The next morning, on consultation with Dr. Pischel, the diagnosis was corroborated and the interesting fact developed that the patient counted fingers, fixating centrally, at a distance of three feet. The massage was repeated morning and evening, the patient remaining quiet but not confined to bed. Day by day vision improved. Four days after leaving the hospital, having had eight massage treatments, his vision was $\frac{15}{200}$, there was less milkiness of the clouded retina, and no apparent change in the embolic blood-vessel.

On November 24th the fundus picture further cleared up, the embolic blood-vessel the same in appearance. On close examination it was seen to anastomose with a fine arterial branch coming from another part of the eye. Vision $\frac{15}{70}$. Massage of the eyeball was now continued for about four weeks longer, was always well tolerated, the patient being in good general condition, and the cloudy patches in the visual field of which he complained getting smaller. About six weeks after the attack the patient was dismissed, with vision $\frac{15}{8}$ with $+ 0.5$, *field of vision normal*, and fundus perfectly healthy with exception of the embolic blood-vessel, which was so characteristic that Dr. Sheets, formerly assistant to Dr. H. Knapp, who happened to pay me a visit, with

no knowledge of the history of the case, and at the time of almost complete recovery of the patient, diagnosed, from the fundus picture alone, embolism of a branch of the central retinal artery.

Remarks.—Sight having within forty-eight hours grown steadily worse leading to almost entire blindness, commencing to improve immediately after forcible massage—that is, pressure against the eyeball, with scarcely any other treatment, we may fairly claim that this exceptional recovery has been due to improved circulation from massage of the eye. The patient has had up to this date no further trouble or recurrence. This happy therapeutic thought occurred to me, remembering a case of Professor Hirschberg's — which had also taken a favorable course. There still remains a doubt in my mind as to the etiological factor in the case — embolism or thrombosis.

Up to the time of his death which occurred one and one half years after the patient had recovered the sight of his right eye, there had been no further trouble with it of any kind.

FURTHER CLINICAL EXPERIENCES WITH HAAB'S GIANT MAGNET, WITH SOME EXPERIMENTAL STATEMENTS REGARDING HIRSCHBERG'S NEW LARGE HAND-MAGNET.

By Dr. A. BARKAN, San Francisco.

IN the ARCHIVES OF OPHTHALMOLOGY, volumes xxvii. and xxviii., eleven cases of extraction of particles of steel and iron from the interior of the eye were recorded by the writer. Ten new cases follow.

CASE 12. — **Piece of steel in vitreous; failure to remove through sclerotic; removal through cornea with Haab's magnet; recovery.**

Henry Keneally, December 17, 1899. At 8 A.M., while riveting, holding the tool while another was striking, a piece of steel flew from tool and struck right eye. Condition two hours after injury: sharp perforation two lines in extent running in a tangent to corneo-scleral ring, rather inside of sclerotic. Some dark uveal pigment lying in wound. No prolapse of vitreous. Cornea clear. Anterior chamber normal, pupil pear-shaped, point toward wound contracted, slightly reacting to light. Iris commences to be blurred. Pupil black. V = $\frac{20}{60}$. Sn 0.75. Slightly tender to touch. Pupil enlarged under atropine. No opacity of lens. In vitreous faint cloud around line of injury. In moving eye a foreign body with two prominent white points became visible, floating in vitreous. Cocainization. Meridional section through conjunctiva and sclerotic with lance, in outer and lower quadrant near equator. Giant magnet negative. Sub-conj. hemorrhage. Thought best to desist using magnet through sclerotic section. Exposing eye to magnet near centre of cornea, large foreign body was promptly attracted, and stuck in iris downward from primary wound. Attempts to disengage caused partial tearing of iris.

Hemorrhage in anterior chamber. Foreign body partly on iris. Incision with Graefe's knife, lower third of cornea, over foreign body. Prompt extraction. Foreign body weighs 0.00175 grams. Partial prolapse of iris. Could not replace it; cut it off; smooth wound. Lane Hospital. No pain; small coloboma downward and inward. Lens clear except equatorial part behind coloboma; some floating opacities in vitreous. Fundus still indistinct. V $= \frac{12}{200}$ and fairly sure to have improved since.

Knapp's advice, to extract metallic particles floating in the vitreous through a meridional section in the sclerotic with Haab's magnet, was not successful in this case. My notes do not state whether Knapp's small platinum spoon, now in my armamentarium, was used in this case, but I recollect distinctly that with the patient sitting up and being obliged to turn his eye extremely in one direction, became unmanageable through the strain; and unless the patient were lying down and under general anæsthesia,—a measure upon which Hirschberg insists in sclerotic sections,—I am afraid the application of the small spoon to keep the wound open would be a difficult task without causing escape of vitreous. Hence I returned to anterior traction and section, and with good result, the lens remaining clear.

CASE 13.—**Particle of steel, presumably in vitreous, successfully removed with Haab's magnet, after four months' time, through the original wound.**

Mr. McPherin, Sutter City, California, March 13, 1900. Age nineteen years. About four months ago a piece of steel struck left eye and remained lodged in it. Eye recovered from accident in a few days, and no trouble was experienced for about six weeks; then, without any warning, pain set in one night which lasted about one hour. Attacks of pain continued for a week, again subsiding until a few days before he applied for treatment on March 13th. Present status: slight pericorneal injection; eye sensitive to light, sore to touch; linear scar about inner end of horizontal meridian, one line long, slight iritis, fair reaction of pupil. After enlarging with atropine slight deposits of pigment are seen on anterior capsule. Vitreous murky. Possibly retinitis. No foreign body visible. V $= \frac{20}{100}$. Working of the sideroscope unreliable on account of street traffic. On exposure to Haab's

giant magnet, using it as a sideroscope, the foreign body made its appearance behind the iris. The following morning the wound was reopened, slightly enlarged, and magnet put in action ; after repeated exposure, each lasting about five seconds, the foreign body was successfully removed, with no entanglement of the iris, except point-like anterior adhesion. There followed slight hemorrhage into anterior chamber. The foreign body apparently cut through iris on its way out. Healing of wound smooth. After absorption of hemorrhage lens is clear, except lower edge of equator. Vitreous gradually clears up. On 25th, patient leaves hospital without pain or soreness to touch. V = $\frac{20}{60}$. Foreign body weighs 0.00245 grams.

CASE 14. — **Large foreign body, located with Hirschberg's sideroscope, removed through enlarged original wound ; recovery.**

Mr. Klein Schoorel, April 12, 1900. On the 10th of April, while splitting wood with hammer and steel wedge, patient felt momentary pain in right eye. Tested his vision immediately, and found it gone. Few particles of foreign matter were removed from the cornea by attending physician in the country. Hardly any pain since the accident happened. Examination : slight swelling of the upper and lower lid. Sensitive to light. Moderate lachrymation. Ocular conjunctiva slightly injected. Almost in centre of cornea an irregularly torn wound with hook-like edges, extending from the corneo-scleral junction upward through the centre of the cornea, indicating the entrance of a large foreign body. Corneal substance bulged forward in flap-like fashion by cataractous substance crowding from behind. Shallow anterior chamber. Iris discolored. Slight hemorrhage along its edges. Multiple posterior synechiæ. Traumatic cataract. Sensitiveness to touch in outer and upper part ; nowhere else. No pain except on touch. Pupil enlarges only moderately. Hirschberg's sideroscope shows deviation to extent of two degrees when patient looks up. Needle quiescent when eye is turned in any other direction. Perception of light and field good. Foreign body not visible. After slight enlargement of corneal wound a large foreign body, weight 0.0319 grams, almost as large as a small pea, was quickly and smoothly removed through the original wound enlarged. Recovery slow but steady. A few weeks later cataract commenced to clear up from margin, and June 24th patient left my care with V = $\frac{1}{200}$ and almost certain further improvement on future needling.

CASE 15.—**Very small, sharp fragment of steel recognized and removed with giant magnet; recovery.**

Mr. Reynolds, Visalia, Cal., 1900. Several days ago a very fine piece of steel chipped off, striking right cornea, producing small scar. Counts fingers at four feet. Iritis. Vitreous body turbid. Fundus indistinct. No foreign body visible. Asmus-Hirschberg sideroscope negative. In order to test presence of foreign body, Haab's giant magnet was used. Only after fully half a minute's exposure a very small metallic foreign body was brought forward and showed behind the iris. Slight but distinct pain-reaction. Fresh incision was made through cornea, and foreign body was smoothly extracted. Pupil round, lens showing opaque spots. Foreign body weighs 0.0006 grams, and represents an exceedingly fine, pointed spicula of steel. Patient made a good recovery. The traumatic cataract gradually became absorbed. Patient living in country reports useful vision; when examined later in office, V = $\frac{15}{10}$ with plus 10.0 D.

CASE 16.—**Successful extraction of small foreign body; recovery.**

Mr. F. L. Hancock, June 26, 1900. (Incomplete notes and foreign body lost.) Very small chip of steel perforated cornea, making hair-like incision. Minute foreign body found on lower part of iris, partly imbedded in the same. Pupil round. No iritis. No pain. Good sight. Sideroscope negative. After making linear incision through cornea, foreign body was removed by giant magnet. Good visual result.

CASE 17.—**Particle of iron successfully removed with giant magnet; panophthalmitis; enucleation.**

Mr. L. Andrews, July 31, 1900. This morning, while striking cast iron with chisel, foreign body hit right eye. No severe pain during or after injury. No bleeding. Lids normal. Slight conj. injection; exactly in horizontal corneal meridian a linear perforating cut. Slight tear of sphincter of iris. No anterior chamber. Iris bulged forward by swelling cataractous masses filling the pupil. V = $\frac{4}{200}$. Projection normal. + T $\frac{1}{2}$. Not tender to touch. Sideroscope unavailable on account of jarring from street traffic. Presence of foreign body being certain in the eye, incision was enlarged and patient put before magnet. Pain-reaction positive. Foreign body is drawn to magnet, and passed after a few seconds through wound with its longest axis forward. Weight, 0.00987 grams. This case referred to me for magnet

extraction by courtesy of Dr. Voorhees ; had to have his eye removed a few days later, florid panophthalmitis having set in, beyond a doubt in consequence of infection through the foreign body, and in all probability the eye would have met with no better fate had any other magnet been used—one of the few disappointing cases in the series.

CASE 18. — **A very large piece of steel, weighing nearly 3.5 grams, successfully removed by giant magnet from vitreous, with perfect recovery.**

A. C. Silleman, sixteen years of age, September 17, 1900. Two hours after the eye was injured, this young fellow presented himself to me for help. Examination : A scleral wound in the horizontal meridian, a few millimetres anteriorly to the equator. Clear vitreous oozing out. The large and gaping wound has ragged edges and is roundish in shape, and 2–2.5‴ in diameter. Pupil enlarges well under atropine. Ophthalmoscope shows large glistening foreign body behind the clear lens, resting downward and inward in the vitreous. Moderate amount of hemorrhage. Fundus not visible. V = $\frac{3}{200}$. Operation : scleral wound slightly enlarged. Magnet applied close to scleral opening, without touching it however. Foreign body did not adjust itself properly in the wound ; on third trial it was attracted, its long axis forward, with but moderate pain, and presented itself as an astonishingly long and large sharp-pointed, ugly, metallic foreign body. Weight, 3.259 gram. Length, 1.45 *cm* by 0.3 *cm*, greatest width. There are a couple of lashes adherent to the foreign body which must have been cut off as with a razor by the sharp foreign body when going in, and being glued to it by a little vitreous and fibrinous exudation from the neighboring tissues, made their exit again with the foreign body, the lids being kept apart so that there was no chance of any lashes becoming entangled with the foreign body on its exit. The wound healed rapidly. Hemorrhage absorbed. Slight peripheral retinal detachment subsided, and ten days after the injury I was able to demonstrate the case to my fellows at a medical society, with V = $\frac{1}{2}\frac{6}{0}$, the eye entirely free from any irritation, well preserved in shape, pupil round, lens clear, and the point of perforation but faintly marked. The further progress of recovery was quick and thorough. Four weeks after the injury the eye was practically normal. My last examination, March 8th, showed V = $\frac{4}{5}\frac{0}{0}$; reads with plus 0.75 at 10 inches. Interior of the eye normal. Scleral scar slightly pig-

mented, smooth, and firm,—to my mind, an unusual recovery. As I am looking now at the foreign body, safely embedded on an object-glass, within a little horn ringlet made purposely to suit its size, I am still astonished that a foreign body of such size and sharpness, with irregular, ragged edges, resembling a miniature shark tooth, could have penetrated the eye (fortunately posterior to the lens), almost transfixing the ball, and could have been successfully removed. Again the giant magnet did the work from first to last satisfactorily, all other instruments being unnecessary.

CASE 19.—**Particle of steel probably in vitreous; hemorrhage; decrease of tension; removal with Haab's magnet; good recovery.**

Mr. Morris Ratto, November, 1900. Worked in Union Iron Works. November 20th, while setting the dye, a small piece of steel was chipped off the punch. Considerable swelling of the ocular conjunctiva. Swelling points to a little perforation seated exactly in the sclerotic, next to the cornea, at the end of its horizontal meridian. There is effusion of blood in the anterior chamber. Color of the iris visible. With focal illumination the anterior chamber is seen to be filled with blood, especially in its lower half, but the pupil is still noticeable and is drawn into the wound. Little shreds of pigment from the iris and conjunctiva in the wound. $-T_2$. Eye not sensitive to touch; no pain. Sees motion of hand dimly. Projection faulty except from nasal side. Evidently extensive hemorrhage all through the eye. Operation: original wound enlarged slightly, and foreign body removed easily on second application of Haab's magnet; slight pain-reaction. Weight, 0.0232 grams. Slept well, except little pain. Hemorrhage absorbed, iris drawn into the wound; small piece of it removed. $V = \frac{8}{200}$. November 23d.—Conj. swelling decreased. Pupillary field fairly clean. Streaks of blood through vitreous. Fundus dimly visible. $V = \frac{18}{200}$. No pain. $-T_1$. December 5th.—Slight ocular injection at the point of injury. Wound well healed. Iris slightly drawn into scar on one side. Pupil well enlarged, pear-shaped. Vitreous apparently clear, excepting a very minute blackish floating opacity; lens clear. Outer lower quadrant of the fundus somewhat gray, and haziness, possibly localized on surface of retina. Looking strongly outward and toward the nose there is a slight circumscribed opacity of the

lens near the equator. Fundus opaque; disc somewhat hyperæmic, and slightly blurred in outline. — T ½. No pain. Not sensitive to touch. V = $\frac{15}{10}$. April 22, 1901.—Has remained well since.

The giant magnet acted successfully and quickly, both as a sideroscope and magnet. No preliminary time-taking exposure to X-ray or Asmus sideroscope. The instrument found the metallic intruder and removed it.

CASE 20.—**Foreign body easily and successfully removed by giant magnet from vitreous; premature exposure to trying work; iridocyclitis; enucleation.**

Mr. G. W. Plum, Lompoc, Cal., November 26, 1900. On November 20th, was bending a piece of iron over the anvil with a sledge-hammer held on top of the iron. Struck sledge with steel hammer, and a piece of steel flew into the eye. No pain. Lost sight in that eye immediately until 25th, when sight commenced to return to slight extent. Some drops had been used. Examination, November 26th: moderate amount of ciliary and conjunctival injection. A little inside of the margin of the cornea there is a very small perforative lesion visible. Directly behind there is a small hole in the iris near its ciliary insertion. Pupil somewhat contracted, reacting only with its outer half. Slight synechia on the inner half of the pupil. Iris somewhat thickened. Grayish reflex from the lens. — T½. The eye is sensitive to touch upward and outward. Fair projection of light. V = $\frac{8}{200}$. After repeated instillations of atropine, pupil enlarged extensively with the exception of one synechia corresponding to the entrance of the foreign body. The lens was opaque in its anterior half, and also slightly in its posterior part. On focal illumination the foreign body was distinctly seen to float in the vitreous with the motion of the eye. I decided to draw the foreign body toward the centre of the anterior chamber, rather than get it out through the old channel, fearing that it would become entangled in the iris during its exit. The pole of the magnet was applied to the centre of the cornea with no reaction the first time. On second application for about ten seconds, the foreign body became visible in the anterior chamber near the edge of the iris. A small incision in the lower part of the cornea was then made, hardly any aqueous was lost, and the foreign body, after a little coaxing, became disentangled from the

iris and readily found its way to the point of Haab's magnet. Atropine, bandage, Lane Hospital. December 5th.—Ocular injection much decreased. Pupil well enlarged. Inner half of lens more opaque. Slight opacities in the vitreous. Details of fundus not visible on account of cataract. No pain or sensitiveness to light and touch. Tn. V = $\frac{8}{200}$. After fourteen days patient temporarily dismissed, to report on progress of cataract. A couple of weeks after the patient had returned home and resumed work as a blacksmith the eye was painful and patient returned. Constant dull pain in eye. A good deal of injection around the cornea. Pupil fairly enlarged. Anterior chamber of normal depth. Lens opaque, but not swollen. $+T_1$. Eye somewhat sensitive to the touch. Perception and projection of light good; apparently beginning of secondary glaucoma. Hospital. Leeches on temple and pilocarpin for forty-eight hours. Did not decrease pain much, though pupil contracted somewhat. Eserine and leeches again gave temporary ease. Rather less injection. Under constant instillation of pilocarpin and one sweat of pilocarpin daily, eye improved during the next few days perceptibly; almost no pain, less tension, eye seemed to improve, when another severe attack of irido-cyclitis with increased tension set in, obscuring pupillary field more and more, clouding the vitreous; sight is now almost gone, constant pain, soreness to touch. Much to my regret, I was obliged to advise enucleation, which was done.

I am unable to account for the unfortunate result of this case, which in its operative treatment was technically correct and smooth. Perhaps the return of the patient to his work as a blacksmith was premature, and exposure to heat, change of temperature, and forcible general muscular exertion might have caused a continuation of cyclitis, which a longer rest of eye and body might have dispelled. The long-continued application of a mydriatic, I am inclined to think, is not serviceable, once the foreign body has been cleanly removed. Possibly extraction through a meridional section in the sclerotic would have been preferable.

CASE 21.—**Foreign body probably in vitreous; removed by giant magnet; cataract; recovery.**

Mr. Chas. Roller, January 5, 1901. In bending down to open a box, patient prying the lid off with a hatchet, the

top of which he hit, a piece chipped off and flew into his eye. Felt that eye was struck and a few drops of water running out, but no pain. Examination: Very slight injection around cornea. On the cornea straight downward and in the middle, nearly bordering on the sclerotic, there is an irregular small defect visible,—so fine that even on examining with loupe it does not seem to penetrate into the eye. The pupil reacts properly and is roundish except the small point downward, which renders it very slightly pear-shaped. In the iris there is a small hole, as if punched out by a minute foreign body. Atropine; the pupil now being fairly enlarged, one sees on the anterior capsule a small triangular dark spot pointing upward. Looking down, exactly similar spot near the posterior capsule, probably the foreign body, either in posterior part of lens or anterior part of vitreous. The hole in the iris now transmits distinctly red light. While patient quickly looks up and down there is a darkish cloud passing through the vitreous, which may contain the foreign body, or be only a clot of blood. The optic disc is but very dimly visible. Operation: After a thorough enlargement of pupil, Haab's magnet immediately drew the small foreign body to rear of cornea. Fresh incision with lance and prompt removal of foreign body. Slight pain experienced. Lane Hospital. On first dressing pupil enlarged; traumatic cataract. Foreign body had evidently passed out through the lens as it had entered. Whether it had been in the vitreous or in the rear part of the lens is uncertain, latter more probable. Wound gaping during the next few days. Flakes of cataract pressing forward. During next week, the tension remaining fairly normal, the cataract underwent steady absorption. Finally clear central pupil with slight anterior adhesion of iris. April 12th: $V = \frac{20}{40}$ with plus 9.0, reads Sn 0.5 with plus 18.0 fluently in 10″. Eye looking strong and normal, only on close inspection pupil slightly irregular; a satisfactory result.

It might have been quite as safe in this case to wait until the cataract was ripe and could be removed with the foreign body, with or without the help of the hand magnet. Instead of losing time, and with perfect safety to the eye, the giant magnet removed the foreign body speedily and cleanly. The patient was grateful for the decisive and good action.

Remarks.—Of the sixteen recoveries the foreign body was located,

(*a*) In the first eleven cases:

Once anterior to the pupil, case No. 2, V = $\frac{20}{20}$.

Once in and behind the iris, case No. 6, V = $\frac{20}{70}$.

Four times in the vitreous,

case No. 3, V = $\frac{20}{200}$
case No. 4, V = $\frac{20}{30}$
case No. 8, V = $\frac{20}{70}$
case No. 10, V = $\frac{15}{200}$
} result—good working vision.

Twice location unknown, probably deep,

case No. 5, V = $\frac{5}{200}$
case No. 11, V = $\frac{5}{200}$
} fair *reserve* vision.

Three times loss of eyeball.

(*b*) In the last ten cases:

Once in iris, case No. 16, V = good.

Six times in vitreous,

case No. 12, V = $\frac{12}{200}$
case No. 13, V = $\frac{20}{50}$
case No. 14, V = $\frac{10}{200}$
case No. 15, V = $\frac{20}{70}$
case No. 18, V = $\frac{20}{30}$
case No. 19, V = $\frac{20}{40}$

Deep-seated location, probably vitreous,

case No. 21, V = $\frac{20}{70}$.

In the first group, of eleven cases, eight recovered and three were lost. In this last group of ten cases, eight recovered and two were lost. Taking the twenty-one cases together, sixteen recovered and five were lost, showing a little more than seventy-five per cent. of good results. The first group shows more total losses and not as good visual results as those attained in the last group, where in seven extractions from the vitreous quite satisfactory results were attained.

In this last group the Asmus sideroscope, improved by Hirschberg, has been tried repeatedly but hardly successfully. If the use of the original Asmus sideroscope, according to Knapp, requires the patience of an angel, Hirschberg's modification of it, while it quite fulfils what its inventor claims for it, in a scientific laboratory or examination room

away from the noise of the street traffic and the effects of electric wires, becomes a useless instrument in one's office or in an operating room not especially adapted for it.

In the last cases published, when the presence of a foreign body within the eye could not be of a certainty proven by the ordinary clinical methods of examination, I have relied upon the giant magnet to act as a sideroscope, to find the foreign body and then extract it, and the magnet has not failed me in either task a single time thus far. I have been able to get along satisfactorily without X-rays, so cleverly used by Drs. Kibbe, Sweet, and others in this country, and especially by Mr. Mackenzie Davidson at Moorfields in London, who produces stereoscopic effects by a very interesting and useful method demonstrated by him at the last International Congress in Utrecht.

I have not used the hand magnet in any shape in the last ten cases. Possibly case No. 20 might have fared better with a scleral incision and Hirschberg's hand magnet.

My experience has taught me that the foreign body is best removed through the enlarged initial opening, and that the giant magnet can be relied upon to do its work from start to finish without assistance of any hand magnet, always under condition that the strongest magnet available (up to this time Haab's) be used. In Knapp's last publication, the use of the hand magnet had proven unsuccessful in quite a number of cases. I find it of much use to thoroughly study the way in which the accident was produced, to have the patient demonstrate to me the position of his body with relation to the source of trouble, so as to get at the direction in which the chip of steel has travelled to and into the eye. In thus finding the position in which the magnetic force lines could be employed to best advantage, it has happened to me repeatedly that in cases where extraction was unsuccessful at first, after the patient's head and eye were put in the same position as they were in when the accident happened the extraction of the foreign body was promptly accomplished. I have never had any difficulty in getting the patient to assume whatever position of head I wished, and I doubt whether a magnet suspended and movable could be

used as effectually and safely as having the patient move his head and eye in the direction desired.

Supplement.—The publication of this paper having been delayed, and I having just returned from a short trip to Europe, I cannot but mention a few facts which I have observed there in reference to this sort of work.

First, whilst in London both Mr. Lawford and Mr. Treacher Collins of Moorfields gave me accounts of cases that had come under their care, where with very powerful giant magnets, they did not succeed in dislodging the foreign body within the eye. They had Mr. Mackenzie Davidson use X-rays for them, and through this the foreign body was located, the eye was cut down upon at the point designated by the X-ray, and the foreign body promptly removed, in one of the cases with the hand magnet. This would tend to make us more careful with regard to our diagnosis of the presence or absence of a foreign body in the eye, as made with the giant magnet, and to resort in doubtful cases more frequently to X-ray methods of examination.

Secondly, in England, as far as I am aware, the sideroscope, either in the new or the old form, is not at all in use. I satisfied myself at the clinic of Prof. Axenfeld in Rostock that even Asmus's original sideroscope, if properly located, can be promptly relied upon to discover the presence of even a very minute foreign body within the eye. I also found that in Prof. Hirschberg's clinic the same result may be reached by the modified instrument in rather less favorable outside conditions, as far as noise and nearness of electric currents are concerned.

Thirdly, Prof. Hirschberg, who was exceedingly kind in showing me his magnet room, evidently inclines to consider favorably the use of powerful magnets in a large number of cases, and has stated in numbers 19 and 21 of *Deutsche medicin. Wochenschrift*, 1901, that he is now using one constructed by Hirschmann, which is even more powerful than Haab's giant magnet.

During this visit I saw and procured a hand magnet which has very lately been so enlarged and improved by Prof.

Hirschberg that it promises to become an exceedingly useful instrument. Whilst considerably larger than his old hand magnet, it is still a handy instrument and can be conveniently used with one hand by the surgeon. Of course it can be moved about readily and may be applied while the patient is lying down. This instrument must be attached to the constant street current. Its power, as I had occasion to satisfy myself, is surprisingly great. Whilst weighing only two k. g., it will with its large conical tip carry 14½ k. g. Combined with a proper resistance coil, I use it now on the same conduit which furnishes me the current for Haab's magnet, and with the use of a suitable plug and taking the resistance coil along, it can be safely used from an ordinary electric light socket, provided the socket is fused heavily enough to conduct two ampères.

It appeared to me of some interest to test practically the efficacy of the three different magnets at my disposal, and I experimented with two metallic foreign bodies, the smallest of the two being probably as small as any that ever pierces the eye, the larger one having been removed from the vitreous of a *living* eye a few days previous, by Haab's giant magnet, the big hand magnet not having yet been put in working order since my return from Europe a few weeks ago.

The foreign bodies were put on a smooth page of writing paper and the most distant point from which they were attracted by the different magnets carefully measured.

Comparative statement of attractive power of:

(*a*) Hirschberg's old hand magnet worked with a chromic-acid bottle element, the tip used the finest of the set and about the same as tip 8 in Experiment *b*.	attracts	foreign body 0.000775 grams at ¾ centimetres.	foreign body 0.0167 grams at ¾ centimetres.
(*b*) Hirschberg's new large hand magnet to be directly attached to Edison's constant street current, a proper rheostat being used.	attracts	foreign body 0.000775 grams with Tip 1 (largest of set) at 4 centimetres Tip 2.....at 30.5 centimetres Tip 9 (finest of set) at 22.5 centimetres	foreign body 0.0167 grams with Tip 1 (largest of set) at 4.5 centimetres. Tip 2.....at 4 centimetres Tip 9 (finest of set) at 2.5 centimetres
(*c*) Haab's giant magnet	attracts	foreign body 0.000775 grams at 13 centimetres	foreign body 0.0167 grams at 16 centimetres.

These figures would indicate that in practice Hirschberg's new large hand magnet will prove of much use, as with its biggest tip it is about five times as strong as his older small hand magnet, and will develop considerable distance traction, whilst even tip No. 9, one of the finest that could be introduced *into* the eye either through the enlarged initial lesion or through a sclerotic meridional section, will still attract an exceedingly fine bit of metal at 2.5 centimetres.

It might be well to try the large hand magnet before using Haab's magnet, and undoubtedly both instruments will find, separately or conjointly, their useful spheres.

CLINICAL CONTRIBUTIONS.

I.—Papillo-Retinitis Due to Chlorosis.

II.—Two Cases in which Eye Strain was Relieved by Vertical Decentration of Lenses.

By CASSIUS D. WESCOTT, M.D.,

ASSISTANT PROFESSOR OF OPHTHALMOLGY, RUSH MEDICAL COLLEGE,

AND

BROWN PUSEY, M.D.,

LATE HOUSE SURGEON, NEW YORK EYE AND EAR INFIRMARY.

I.—Papillo-Retinitis Due to Chlorosis.

IN an article in vol. xxviii of these ARCHIVES, Schmidt [12] reports a case of papillo-retinitis due to chlorosis, and collects reports of six other cases where the same conditions existed (Dieballa,[4] Bitsch,[2] Gowers [6] two cases, Williams,[14] and MacKenzie [9]). About the time that this report appeared, similar cases were recorded by de Schweinitz,[5] Oliver,[11] and Bannister.[1] In looking over the literature, the case "Bleichsucht mit Amaurose," published by Dr. F. Praël,[13] appears to be undoubtedly of this class; and while there was no ophthalmoscopic examination—the case being reported in 1840 and, therefore, before the ophthalmoscope was invented—we think it should be classed as one of these cases. The case of Litten and Hirschberg, [8] "Ein Fall von Totaler doppelseitiger Amaurose im Verlauf einer leichten Anaemie," has been everlooked; it belongs in this list. And there are to be added to this list two cases, reported by Neumann,[10] three cases by Kinghorn,[7] and a case by Engelhardt.[3] This brings the total number of recorded cases of papillo-retinitis due to chlorosis to seventeen.

But the fact that there are only a few cases reported is not the principal reason for reporting our case. That it is appropriate to call attention to papillo-retinitis in chlorosis is suggested by Schmidt's [13] case. The diagnosis, in his case, of the cause of the trouble was not made until forty days after the first examination of the patient and on the third examination in the medical clinic, to which the case was referred; on the second visit to the medical clinic, the diagnosis in this case was that of hysteria. Gowers [6] says that in one of his cases he first attributed the cause to syphilis, and treated it with potassium iodide. "No improvement occurred until iron was substituted. Too late, unfortunately, to prevent partial atrophy. I fear that the permanent damage to sight was, in part, due to the delay in the administration of iron." We have here the first suggestion of the importance of the early recognition of the conditions. The most recently recorded case is from the clinic of Lichtenstein, reported by Engelhardt [5]: "Neuritis optica bei Chlorose; Krankheits-Verlauf und Tod unter den Symptomen eines Hirntumors." The case was treated for a year as one of brain tumor and came to post-mortem examination. With admirable frankness, for which great credit is due, the reporter says that with a correct diagnosis the unfortunate end could have been avoided.

Papillo-retinitis in chlorotic patients is probably much more frequent than the reports would indicate; and the facts that an error in diagnosis may occur in such hands as Gowers,[6] Schmidt,[13] and Engelhardt [5] of Lichtenstein's clinic, and that such an error may have so disastrous results, prompt us to report the following case.

The patient was referred to us by Dr. H. N. Moyer, whom we wish to thank for the privilege of reporting the case. Dr. Moyer supplied the following notes:

Hattie B., American, aged fifteen. Six weeks ago the complexion assumed a pale yellowish appearance. A continuous headache has been present over the eyes. At times it becomes quite severe, and is followed by vomiting. For the past year she has had a dark yellowish discharge from the vagina. The first menstruation occurred July 7, 1899, and lasted one week; the

discharge was muddy in color. The second occurred Aug. 24th, and the third, Sept. 27th. The menstrual flux has been very scanty. Appetite fair. Bowels regular. Sleep more or less disturbed on account of headache. The lips and conjunctivæ are pale. The urine is normal.

Blood examination: Red discs 3,670,000. Hæmoglobin 45 %. Leucocytes 8000. The red discs are pale. Diagnosis: Chlorosis.

Dr. Moyer referred the case to us to find out if an error of refraction existed, and, if so, what bearing it might have on the headaches. A part of our notes is omitted.

V L E $\frac{6}{6}$. V R E $\frac{6}{6}$. The conjunctivæ are pale. External eye normal. Homatropine and cocaine used for mydriasis and cycloplegia. Intraocular examination, R E. Vitreous clear. Papilla greatly swollen, and the outlines of the margin are hazy. The veins of the retina are full and tortuous, and in color are strikingly similar to that of the arteries. There are several small central retinal hemorrhages. The conditions are the same in the left eye, possibly of milder degree.

Refraction:

Retinoscopy L E + 2.00, + 2.50 with Cyl. Ax. 90°.
" R E + 0.50, + 1.00 with Cyl. Ax. 90°.
Javal L E 1.00 Ax. 90°; R E 1.00 Ax. 90°.
L V $\frac{6}{4\frac{6}{5}}$ W + 2.00 S + 0.50 Cyl. Ax. 90° V = $\frac{6}{6}$ +.
R V $\frac{6}{6}$ W + 0.50 S = + 0.50 Cyl. Ax. 90° V = $\frac{6}{6}$ +.

The patient was returned to Dr. Moyer with the diagnosis of neuro-retinitis due to chlorosis. Dr. Moyer put the patient upon iron. The patient's eyes were examined twenty days later and the following notes are from our history: "The outlines of the disc are distinct. The vessels are less full and less tortuous. The blood is absorbed from the right eye; one or two small spots of blood remaining in the left eye near the nerve." Two months later there were practically no signs of the former papillo-retinitis and the vision was perfect. The chlorosis had disappeared.

II.—Two Cases in which Eye Strain was Relieved by Vertical Decentration of Lenses.

Again referring to these Archives and the same volume (vol. xxviii.), Dr. Burton L. Dunn [18] has an article on eye strain in its relation to the vertical centration of lenses. Bearing on this subject, the following histories are interesting:

CASE 1.—Mr. E. A. M., January 3, 1900. Age, thirty. Occupation, office work. Complains of frequent headaches and eye fatigue and sudden attacks of dizziness. Two brothers myopic. Parents had sick headache. Patient is a nervous dyspeptic. Has headache every afternoon, and frequently is incapacitated for work. In addition to the ordinary headaches has typical migraine attacks. Had no eye symptoms until 1882, when he noticed that he could not see well in the distance. Has been examined by several oculists in this and other cities.

Has now: L — 3.50 S, — 0.50 Cyl. Ax. 120°, V = $\frac{6}{6}$.

R — 4.25 S, — 0.75 Cyl. Ax. 30°, V = $\frac{6}{6}$.

Without lenses L V, $\frac{6}{45}$; R V, $\frac{6}{45}$; Exo., 1°; Ab., 4°; Ad., 16°

Jan. 8, 1900.—Refraction under atropine:

Retinoscopy: L — 3.50, — 3.00 with Cyl. Ax. 160°.

R — 4.00, — 3.50 with Cyl. Ax. 30°.

L V W — 3.00 S, — 0.75 Cyl. Ax. 165° = $\frac{6}{6}$.

R V W — 3.50 S, — 0.50 Cyl. Ax. 28° = $\frac{6}{6}$.

Eso. 2°. L Hyp. 1°. Given the above in spectacles for constant use.

Jan. 30, 1900.—Glasses worn with comfort, and while the effect of the atropine lasted and the eyes were not used he had only one headache. Ab. 6°. Ad. 30°.

April 20, 1900.—Is better, but is having frequent headaches. Ab. 6°. Ad. 24°. Exo. 8°. Given prisms 10°, bases out, for exercise.

April 28, 1900.—Ad. 28°. Eso. 1°. Headaches continue.

May 4, 1900.—Given correction + 0.50 S for near. Headaches continue.

Aug. 28, 1900.—Still having headache. Has some Exo. Ad. 30°. Ordered glasses trued up and gave 10° prisms for exercise again.

Oct. 16, 1900.—Headaches continue. Ordered for experiment, for reading, full correction in lenses decentred downwards $\frac{3}{16}$ inch, and the spectacles to be so set on the nose that, when the patient looks straight ahead with the head erect, he will look through the lenses at the juncture of the upper with the middle third—they had been so set before. The patient has made plans to give up work for the winter and go to California for outdoor life.

Dec. 20, 1900.—Patient has been wearing decentred lenses for near work, and has been so much more comfortable that he has

been able to attend to his work continuously. The California trip has been abandoned.

Aug. 10, 1901. — "Those decentred lenses are saving me at least three headaches a week." The patient's general health is greatly improved, and the migraine attacks are very much less frequent. The patient is enthusiastic over the decentred lenses. He tells of an interesting experience: One afternoon, shortly after he got the decentred lenses, he went to his desk after luncheon and went to work with his distance glasses. His head began to ache, and, as it came on, as he says: "I thought my old troubles were still with me and I started to close my desk and quit for the day. As I was preparing to leave, I discovered that I had not changed my glasses and that I was working at my desk with my distance glasses. I put on the decentred lenses, and the discomfort vanished." He is not able to wear the decentred lenses on the street.

Case 2.—Maggie M., age twenty-seven. In 1890 the patient was examined with the eyes under the influence of atropine, and she was given for constant use L — 2.75 Cyl. Ax. 15°; R — 7.00 S in spectacles. The glasses were worn with comfort until 1900, when she returned complaining that the eyes were uncomfortable and that she was having headache. "The right glass seems to tire the eye." The young lady is now a teacher in the public school. She is of nervous temperament, but has very good general health.

Aug. 24, 1900.—R. Hyp. 2°. Eso. 3°. Refraction under homatropine and cocaine:

Retinoscopy L E — 4.00, Cyl. Ax. 20°.
" R E — 7.50, — 7.50.
V L W — 0.25 S — 4.00 Cyl. Ax. 10° = $\frac{6}{9}$ —.
V R W — 7.50 S = $\frac{6}{12}$.

Given full correction for left: — 6.00 S for right, in spectacles. The spectacles to be so set on the nose that, when the patient looks straight ahead with the head erect, she will look through the lenses at the junction of the upper with the middle third.

Sept. 14, 1900. — The eyes are still uncomfortable. Ordered the same correction with the lenses decentred downwards $\frac{1}{4}$ of an inch.

Oct. 14, 1900.—The troubles have all disappeared. Is wearing the glasses constantly.

Aug. 20, 1901. — Continues to wear the glasses with perfect comfort.

BIBLIOGRAPHY.

1. BANNISTER, H. M. Chlorosis and Retino-Papillitis. *Journal of Nervous and Mental Disease*, New York, 1898, xxv., p. 874.

2. BITSCH, W. Neuro-Retinitis bei Chlorose. *Klin. Monatsbl. f. Augenheilk.*, xvii., p. 144.

3. DE SCHWEINITZ, G. E. Cases of Monocular Optic Neuritis. *The Philadelphia Polyclinic*, Philadelphia, 1896, v., No. 50, p. 491.

4. DIEBALLA, G. Chlorosis und Papilloretinitis. *Deutsche med. Wochensch.*, 1896, No. 28, p. 445.

5. ENGELHARDT, A. Neuritis optica bei Chlorose; Krankheits-Verlauf und Tod unter den Symptomen eines Hirntumors. *Münchener med. Wochensch.*, 1900, p. 1233.

6. GOWERS, W. R. Optic Neuritis in Chlorosis. *The British Medical Journal*, 1881, i., p. 797.

7. KINGHORN, H. McL. Some Retinal Complications in Chlorosis. *The Montreal Medical Journal*, Jan., 1900, p. 42.

8. LITTEN and HIRSCHBERG. Ein Fall von Totaler doppelseitiger Amaurose im Verlauf einer leichten Anaemie. *Berliner klin. Wochensch.*, 1885, No. 30.

9. MACKENZIE, S. Diffuse Papillo-Retinitis Due to Chlorosis. *The British Medical Journal*, 1885, i., p. 328.

10. NEUMANN. Papilloretinitis bei Chlorose (*Inaug. Diss.*, Berlin, 1897), cit. in *Jahresber. über Ophthalmologie*, 1897, p. 263.

11. OLIVER, C. A. A Study of the Ophthalmic Changes in Chlorosis, Pernicious Anæmia, and Leucocythæmia. *Trans. Amer. Ophth. Society*, Hartford, 1897, p. 212.

12. PRAËL, F. Bleichsucht mit Amaurose. *Monatschrift für Medicin, Augenheilkunde und Chirurgie*, Leipsic, 1840, iii., p. 187.

13. SCHMIDT, W. On a Case of Papillo-Retinitis Due to Chlorosis. ARCH. OF OPHTH., 1899, xxviii., 619.

14. WILLIAMS, R. A Case of Double Neuro-Retinitis, Apparently Due to Simple Anæmia. *The British Medical Journal*, 1884, i., p. 10.

15. DUNN, BURTON L. Eye Strain in its Relation to the Vertical Centration of Lenses. ARCH. OF OPHTH., 1899, xxviii., 487.

CILIARY PROCESSES IN THE PUPILLARY AREA.

By Dr. R. SCHWEIGGER, Berlin.

(*With a colored drawing on Plate X. of Vol. XLII., 1–2, German Edition.*)

Translated by Dr. Ward A. Holden.

IN vol. xxxiii., p. 109 of these ARCHIVES (German Edition, 1896; these ARCHIVES, vol. xxvi., p. 242, 1897), Siegrist for the first time described and pictured ciliary processes in the pupillary area. This condition, which certainly is not frequent, presented itself to me recently in such remarkable clearness that it seemed to me worthy of record.

The patient, R. B., a man of twenty-two, had in the rather small pupillary area of the right eye a grayish-white mass—cataracta secondaria or reducta membranacea—which he wished removed for cosmetic reasons. The gray pupil had been noticed by his parents when he was six months old, but they do not recollect any previous injury. The right eye is somewhat smaller than the left, squints in, and exhibits rotatory nystagmus-like twitchings upward and outward. The patient recognizes movements of the hand held near the right eye, but he cannot fixate accurately with it. Projection in the periphery of the field is uncertain.

Left eye: $V = \frac{6}{60}$, a small macula of the cornea. This eye also exhibits rotatory nystagmus which, however, on some days is very slight or apparently wanting. The nystagmus is more perceptible when the eye is turned laterally, but ceases when energetic efforts are made to turn the eye laterally and when the eye fixates an object directly before it.

In the right eye one sees at once with oblique illumination that

the membrane lies well behind the iris on the nasal side and is separated from it. In mydriasis the condition is that shown on Plate X. In the deepened posterior chamber about twenty-five conical fibrous tracts arise, occupying more than half the pupillary margin and converging toward the temporal margin of the pupil. The conical processes were of a darker brown color than the iris, and lay close side by side. Their place of origin lay about 1 *mm* behind the iris, as shown by the breadth of the shadow in oblique illumination. The length of these processes varied considerably; the shorter ones only reached the membrane with their tips, and three particularly short ones extended out to the membrane in short delicate gray filaments, but the tips of the larger processes, about half the total number, extended out upon the secondary cataract, to which they were firmly attached.

There could be no question but that we had to do here with ciliary processes drawn out longitudinally. Siegrist's case differed from this case in that he found zonula fibres extending between the ciliary processes and the shrunken lens, while in this case the union is immediate and only in connection with the shortest processes is there any indication of zonula fibres.

Here, perhaps, in the prenatal period or in very early extrauterine life the lens had become luxated medially, after which there occurred mild inflammatory changes in the ciliary body, adhesions to the shrinking lens, perhaps also a partial detachment of the ciliary body, and finally a diminution in the size of the entire eyeball. The visible ciliary processes, however, do not exhibit many remains of new-formed membranes, but lie isolated, without tracts of scar tissue uniting them.

In comparison with the ciliary processes in the normal eye, these processes are not only larger but also broader and fewer in number. The normal height of the ciliary processes on the nasal side is, according to Salzmann, 1.5 *mm*, and the length 1.8 *mm*. After excision of the iris back to its root, they can be seen with the ophthalmoscope only with the greatest difficulty, as Reimar has shown. In this case, under atropine mydriasis, they are visible for a distance of 2 *mm* medially from the pupillary margin, but possibly a detach-

ment of the ciliary body may have contributed to this. Notwithstanding their being drawn out they have not taken part in the general reduction visible in the size of the eye. On the contrary, they are broader than normal, and twenty-five of them occupy more than half the circle, while in the normal eye thirty-five or forty processes are required for this. Perhaps at some points two adjacent processes have united to form a thicker cone.

Since the patient wished to be free from the conspicuous gray membrane in the pupil, it seemed that after division of the membrane it would be retracted by the ciliary processes, and the processes themselves need not be disturbed.

But it was impossible to penetrate the secondary cataract with the narrow Graefe knife in holocain anæsthesia. It sank back into the depths of the eye, causing the patient pain and rendering him restless, and an accidental touching of the ciliary processes with the knife brought about a slight hemorrhage. This caused me to interrupt the operation in order later to attempt another procedure in narcosis.

The hemorrhage was soon absorbed, and in three weeks the eye was again free from ciliary irritation, and a second operation was undertaken in narcosis. I separated the ciliary processes from the secondary cataract, and with a small English model of my father's scissors made several cuts into the membrane. The desired result was thus obtained; the pupil, when undilated, is black. The eye, however, cannot be transilluminated, and naturally has no more vision than before.

In mydriasis the remains of the ciliary processes, which have not wholly retracted, are still visible in the pupillary area.

CILIARY PROCESSES IN THE PUPILLARY REGION.

By J. HERBERT FISHER, M.B., B.S. (Lond.), F.R.C.S.,

ASSISTANT SURGEON, ROYAL LONDON OPHTHALMIC HOSPITAL; ASSISTANT OPHTHALMIC SURGEON, ST. THOMAS'S HOSPITAL, LONDON.

OBSERVING in the ARCHIVES OF OPHTHALMOLOGY that a case has recently been reported under the above heading in the *Arch. f. Augenheilk.*, xlii., p. 171, by Dr. R. Schweigger, of Berlin (see the translation, with illustration, of R. Schweigger's communication in the preceding article of this volume), it occurs to me that the following brief notes of an apparently similar case may be of interest.

W. L., female, æt. four, was sent to me at St. Thomas's Hospital on October 31, 1898. I learnt that when about three months old she had been examined under anæsthetic at St. Thomas's Hospital by Mr. Nettleship, who found the left eye healthy. The condition when seen again by him at the Royal London Ophthalmic Hospital (Moorfields) in October, 1895, was—R: shrunken opaque lens. Iris lighter brown than L. Cornea, 10 *mm.* P acts to light. L: cornea, 11 *mm.;* lens clear. There is no note that the pupils were put under mydriatic on either occasion.

The parents informed me that the patient was their only living child; one child had been born since W. L., but only survived its premature birth a few hours. The mother had had no miscarriages. W. L.'s right eye was noticed to have a white spot on it when she was a few weeks old. No history of its having been inflamed.

On examination I found the right eye to diverge slightly. There was no congestion. Tension normal. The anterior chamber was of uneven depth, being shallow in the temporal portion. The temporal part of the pupillary edge of the iris was

drawn back and adherent to the lens ; the remainder of the free margin of the iris was regular in outline and acted to light. The pupil was reniform and occupied by the remains of a shrunken opaque lens. There was no scar to be found either in the cornea or sclerotic. The projection of light was faulty in the nasal part of the field.

After the use of atropine the pupil still preserved its kidney shape, dilating well in its nasal part and fairly, above and below, in its temporal portion. The mid point of the temporal part of the pupillary circumference remained drawn back and tied down to the shrunken lens, by a broad posterior synechia. The shrivelled lens was for the most part of a silvery greenish lustre ; in its upper-inner portion it showed one small circular spot of yellowish color, and below its centre some dots of cretaceous change in its superficial layers ; its anterior capsule was crossed at about the centre by a branching vessel carrying blood ; the trunk of this vessel appeared to spring from the anterior surface of the temporal part of the iris, and to derive its blood from the vessels of this diaphragm ; the branches into which it divided passed out of sight beneath the nasal portion of the edge of the pupil. In the upper and lower bays into which the temporal edge of the pupil dilated, there appeared from beneath the iris a series of finger or tongue-like processes with pointed extremities lying upon the shrunken lens and reaching nearly half-way across the dilated pupil ; these projections were of a brownish color and quite obviously composed of pigmented uveal tissue ; they formed a close palisade and numbered from twelve to twenty in all, the greater number being in the upper of the two bays. They clearly passed out from beneath the iris, the pupillary edge of which, though not circular, was everywhere sharply defined. The temporal part of the iris was evidently pushed forward by some tissue behind it, rendering this part of the anterior chamber shallow ; the conclusion seems irresistible that these projections were ciliary processes dragged forward into the pupil by the contraction of a shrunken lens, exercising traction through its suspensory ligament. The defect of the field to light in its nasal part is interesting and suggestive. I advised no operative treatment, unless later in life an increase in the squint should require attention. I have not seen the patient since.

ON LEUCÆMIC PSEUDO-TUMORS IN THE RETINA.[1]

By Dr. HUGO FEILCHENFELD, Lübeck.

(*With two figures on Plate XXII. of Vol. XLI., 1901, German Edition.*)

Slightly abridged translation by Dr. Ward A. Holden.

HISTOLOGICAL investigations on leucæmic retinitis have been reported in considerable number. The symptoms observed vary greatly, but among the different irritative changes there are rare specific forms which are characteristic of the disease.

Virchow, in his lectures on tumors, spoke of the possibility of such tumors forming in the retina. But while tumors have been found in the conjunctiva, iris, choroid, and orbit, none has hitherto been found in the retina. Among the irritative lesions we count those inflammatory changes to which the retina is subject in many circulatory disturbances, which are found, for example, in albuminuria and diabetes. Furthermore, there are cases in which the inflammatory changes are less obvious and there are new formations which in many points resemble true tumors. Such a case was the following:

Mrs. A. B., aged forty-seven, came to the University ear clinic, in Berlin, February 9, 1894, on account of defective hearing and tinnitus of five weeks' duration. Since the climacteric she has been ill, and complains of pains in the joints, swelling of the feet, and headache. Otoscopic examination negative. Emaciation, protrusion of the abdomen. Ophthalmoscopically, slight papil-

[1] From Professor Greeff's Clinic at the Charité Hospital, Berlin.

litis, tortuousness and hyperæmia of the retinal vessels, old hemorrhages, and numerous white patches, particularly in the periphery of the fundus. No orange color was noted.

The patient died February 24th. The brain exhibited marked stasis, with hyperæmia and a distension of the sinuses and ventricles with a semi-liquid chocolate-brown mass, and enormous enlargement of the spleen and liver. Virchow made a diagnosis of lienal leucæmia.

The deafness was attributed to central processes resulting from cerebral hemorrhage.

The posterior segments of the eyes were removed and preserved in Müller's fluid. Years later I obtained them for study, through the kindness of Professor Greeff, to whom my thanks are due.

The specimens were imbedded in celloidin, and the sections stained with hematoxylin-eosin or carmine.

The sclera everywhere was of normal thickness and free from inflammatory infiltration. What was particularly striking was the condition of the choroid, which was three times as thick as normal. This thickening was due to the hyperæmia, the choroid having the appearance of an injected specimen. In all its layers the vessels were so distended that the surface of the choroid was irregular and the lamina vitrea described a wavy line. The tissues of the choroid had undergone no inflammatory change; there were but few round cells scattered among the intervascular spaces; and in the layer of large vessels the adventitia was slightly thickened. There were no hemorrhages or pseudo-tumors.

The papilla did not project above the level of the retina; but there was a moderate small-celled infiltration in the septa, particularly along the smaller vessels. The arachnoid sheath was not thickened, and the intervaginal space was but slightly widened and contained a few round cells. The walls of the central vessels seemed normal, except for a very slight infiltration. They were distended with blood, in which white corpuscles predominated, the white being arranged along the vessel wall and the red in its axis.

In the retina itself the inflammatory changes were not

marked. There was no sclerosis of the nerve fibres. Müller's supporting fibres were thickened, and there was œdema, particularly in the inner reticular layer. Hemorrhages were present in all layers, but more numerous in the deeper layers and more numerous also toward the equator of the ball. For the most part they consisted merely of a few corpuscles scattered among the elements of the nuclear layers. And since the white corpuscles predominated here also, it was hard to say what foci represented pure hemorrhages, and what inflammatory infiltrations as well. Most of the hemorrhages were fresh, and rarely did one find granular pigment degeneration, indicating the breaking down of red corpuscles. There was a single marked inflammatory focus, about 1½ p.d. from the disc (*e*, Fig 1, Pl. xxii.). Here the retina was twice as thick as normal. All the layers were involved and could not be differentiated. Here also many red corpuscles were scattered about.

The striking feature of the picture, however, was the presence of the large neoplasms that I have designated leucæmic pseudo-tumors. They were composed of red and white blood corpuscles, but their form was peculiar and distinguished them from the ordinary hemorrhages. The latter were small effusions of blood, which extended among the elements of the retina in the directions of least resistance, and thus assumed the well-known striped character. The other formations had pushed the retinal elements aside, or had rarefied them, and often in their spherical shape appeared encapsulated. These had elevated the limitans externa and interna, and frequently had broken through the former and assumed a fungus shape. The red corpuscles were of the usual sort. The white corpuscles differed in the amount of protoplasm present. There were also many eosinophilous cells. Evidences of karyokinesis were not observed. The arrangement of blood which Leber observed, the red corpuscles surrounding the white in a marginal zone, was not found here, but the red and white often lay in separate groups. The tumors were not vascular and exhibited no signs of organization.

A vessel was always found in the neighborhood of a tumor,

though often it was small, and no rupture of the vessel wall was found. In one instance the vessel ran in the outer nuclear layer and was, therefore, of new formation.

This case differed only in unimportant details from those reported by Leber and by Deutschmann. The cause of the extensive diapedeses is to be sought for in the altered composition of the leucæmic blood. The number of white corpuscles is greatly increased and they are grouped along the vessel walls. They possess the power of passing through the unchanged vessel wall more readily than the red corpuscles, and they may make a path of exit for the red corpuscles. A second factor is the diminished power of coagulation of the leucæmic blood which does not stop up the exit paths. The small calibre of these paths explains the gradual development and extension of the extravasations, and their continued patency explains the great extent of the extravasations. The pronounced tendency of the white corpuscles to become agglomerated explains the round form of the focus, and the red corpuscles passing out later naturally arrange themselves about this nucleus.

The fact that the blood corpuscles were well preserved and yet had not been thrown out recently would indicate that the corpuscles in leucæmia possess an abnormal power of resistance.

The irritative changes were not pronounced in our case although slight inflammatory processes had extended through all portions of the neuroretinal tissue, an expression of which was the new formation of vessels. The marked hyperæmia, particularly of the choroidal vessels, is less to be referred to inflammatory causes than to a slowing of the general circulation due to the multiplication of the leucocytes rolling along the vessel walls and adhering to them. The changes found are in no relation to the hyperæmia, and the neighboring tissues, in which the afferent vessels are imbedded, show so little infiltration that there can be no question of stasis from compression. This distinguishes our case from the irritative cases described by Oeller, Kerschbaumer, Osterwald, and Deutschmann.

A third possibility is that the cause of the stasis is within

the lumen of the vessel and not in its wall. Thus Michel believes that, in general, retinitis apoplectica is due to thrombosis of the central vessels, and in leucæmia marantic thromboses have been found in the vessels of other organs.

There are thus two main forms of leucæmic affection of the retina: the irritative and the specific. The former may have its primary seat in the retina itself, for it belongs in the same category with nephritic and diabetic retinitis and presents the same changes, *viz.*: œdema, infiltration, sclerosis of the nerve fibres, and affections of the retinal vessels (Roth's case). Similar to this form is that form extending from the choroid through the pigment epithelium (Kerschbaumer's case). Secondly, the primary lesion may be in the central artery or vein or in the more peripheric vessels, due to pressure from without—a neuritis (Deutschmann's case), or to thrombosis (Michel's case). In all these the retinal affection is secondary and due to mechanical causes.

The specific forms may run their course without symptoms of inflammation (Leber's case). They are specific in that they arise in leucæmia only, being caused by the peculiar state of the leucæmic blood. Whether in cause and development they are similar to the true leucæmic neoplasms cannot be decided, and the cause and development of the latter have given rise to diverging views and conflicting hypotheses.

Explanation of the Figures on Plate XXII.

FIG. 1.

Transverse section through the fundus in leucæmia, × 16.

a. pedunculated pseudo-tumor.
b. retinal vessel near it.
c. vena
d. arteria } centralis retinæ,
e. focus of retinal inflammation.
f. detached pseudo-tumor.
ch. choroid.
sc. sclera.

FIG. 2.

Retina with pseudo-tumor, × 90.

a. pseudo-tumor.

b. new-formed vessel in the outer nuclear layer, from which the pseudo-tumor seems to qroceed.

c. large dilated retinal vessel with hemorrhages about it.

REMARKS UPON MR. A. S. PERCIVAL'S ARTICLE UPON "PERISCOPIC LENSES" IN THE ARCHIVES OF OPHTHALMOLOGY, VOL. XXX., NO. 5, 1901.

By Dr. F. OSTWALT, Paris.

Translated by A. Duane.

IN the article above mentioned, Mr. Percival cites only my paper published in von Graefe's *Archiv* (xlvi., 3). He does not speak of my later publications on the same subject, one in German, appearing in von Graefe's *Archiv* for 1900 (l., 1, pp. 44–62), the other in French, appearing in the *Revue générale d'ophtalmologie* for 1900 (No. 7, pp. 289–306).

In these two articles, in the first place, I corrected the mistake which had crept into my previous calculations and which Mr. Percival speaks of; in the second place, I stated the results of my new experimental researches concerning the best form of periscopic glasses.

I take advantage of this opportunity to remark that the results at which Percival has arrived are sufficiently in agreement with mine.

For proof of this let us look at the upper half of his table (p. 528), and express in dioptries the curvatures of the anterior and posterior surfaces of the most perfectly periscopic glasses, giving the sign + to the converging, and the sign — to the diverging surfaces. The values thus calculated from Percival's data are found in Column II. of the subjoined table. In Column III. I have placed the corresponding values found by me, deduced from my graphical statement given in von Graefe's *Archiv* (l., 1, p. 49, Fig. 1).

I.	II.		III.	
Total refractive power.	Best periscopic form according to Percival.		Best periscopic form according to Ostwalt.	
− 2.0	+5.3	− 7.3	+5.0	− 7.0
− 5.0	+3.1	− 8.1	+2.5	− 7.5
− 8.0	+0.64	− 8.64	+0.75	− 8.75
−10.0	−0.35	− 9.65	+0.1	−10.1
−13.0	−0.35	−12.65	+1.3	−14.3
−15.0	+0.88	−15.88	+0.1	−15.1
−17.0	−0.36	−16.64	−1.2	−15.8

We see that the agreement is as perfect as could be desired. The slight differences have no sort of practical importance. Moreover, they can be readily explained by the fact that Percival has made his calculations with a value of $n = 1.54$, whilst I have taken the approximate value, $n = 1.5$.

Up to −10.0, the difference amounts to at most some tenths of a dioptry. It is, therefore, practically negligible.

It is only above 10.0 D, that is to say, for concave glasses which are very strong and which consequently are but rarely prescribed in practice, that we see (and that only once, namely, for a glass of −13.0) a discrepancy of somewhat over 1.0 D.

Furthermore, like myself, Percival shows that for a periscopic lens the plano-concave form is the best for a concave glass of from 9.0 to 10.0 D on the one hand, and for a concave glass of from 15.0 to 17.0 D on the other.

I am happy to see my results thus confirmed by so distinguished a mathematician as Mr. Percival.

REPORT OF THE GERMAN OPHTHALMOLOGICAL SOCIETY MEETING AT HEIDELBERG, AUGUST 5–7, 1901.

By Prof. R. GREEFF.

Abridged Translation by Dr. Ward A. Holden.

FIRST SESSION, AUGUST 5TH. PROF. UHTHOFF PRESIDING.

1. Nagel (Freiburg in Br.): **Reports on and demonstrations of the dichromatic color systems.**

The writer stated that the Hering theory of opposed colors, although accepted by many ophthalmologists, had never found support among physiologists, since the conceptions on which it is based cannot be reconciled with biological experiences.

In fact the Hering as well as the original Helmholtz theory supposes the formation of the color-perceiving apparatus to be more simple than it is. As an example of the unreliability of the theory he cites the difference between red and green blindness, which Hering erroneously attributes to differences in retinal pigmentation. The unfitting terms red and green blindness v. Kries would replace by protanope and deuteranope, which express no more than we actually know. Hering's division into relative blue-seeing and relative yellow-seeing is in direct contradiction of proved facts.

2. Bach (Marburg): **Remarks on the method of examining the pupil, the causes of anisocoria, and disturbances of pupillary reaction.**

3. Baas (Freiburg i. Br.): **On an unusual pupillary reaction.**

Basing his statements on a particular case, the writer discusses the anatomical basis of the Pilz-Westphal phenomenon. A long tract in the posterior longitudinal bundle leads from the facial to

the oculomotor centre. The latter contains also the sphincter nucleus, which is composed of various groups, physiologically and pathologically distinct. The chief of these groups is formed of cells which furnish the reaction to light, a second group governs the reaction in convergence and accommodation, and a third the lid reaction. One may suppose that the functions of all these groups are transmitted to the sphincter muscle through the ciliary ganglion.

4. Von Hippel (Heidelberg): **On the pathology of the corneal endothelium.**

The question of how far endothelial affections are responsible for parenchymatous affections of the cornea was followed by further experimental, anatomical, and clinical investigations.

In parenchymatous keratitis following ligation of the four venæ vorticosæ, there may be obtained, when the opacity begins, a deep-lying fluorescin staining, which lasts from one to three days and disappears earlier than the opacity. The stained parts correspond to defects or changes in the endothelium. With the opacity the cornea swells, but there is neither cellular infiltration nor formation of new vessels. The membrane of Descemet does not become ruptured, and eight weeks later a new vitreous membrane is found on its posterior surface.

Parenchymatous keratitis after ligation of the vortex veins is therefore due to a primary affection of the endothelium.

The examination of two human eyes which had presented the picture of parenchymatous keratitis, years after cataract extraction, showed extensive destruction of the endothelium.

5. Hertel (Jena): **On the pathological anatomy of the cornea.**

Hertel studied the finer changes in the corneal corpuscles in cases of purulent keratitis in man, using flat sections of the cornea stained with thionin and differentiated. In progressive ulcers, he found at the seat of purulent infiltration various degenerative changes in the corpuscles. Farther from the ulcer there were evidences of proliferation. In the stage of repair, the corpuscles become greatly enlarged and evidences of nuclear division were found, the number of the cells being greatly increased.

6. Best: **On the presence of glycogen in the eye.**

Glycogen is found: (1) in tumors such as carcinoma of the lids and choroidal sarcomas; (2) in all inflammations and suppurations in the eye, partly free and partly in leucocytes; and (3) in inflam-

matory and in degenerative processes the retina and the epithelium of the ciliary body contain glycogen.

9. LEBER (Heidelberg): **On phlyctenular inflammation of the eye.**

Leber believes that there is a connection between phlyctenular inflammation and scrofula, although it cannot be strictly proven. The accompanying vesicular eruption on the skin is probably due to a multiple ectogenous infection of the cutis, while phlyctenulæ in all probability do not arise in this way.

From the microscopic examination of fresh cases Leber comes to the following conclusions: No micro-organisms that could have caused the disease were to be found by the usual staining methods. Hence the view is untenable that phlyctenulæ are due to ectogenous infection with staphylococci.

The phlyctenula of the conjunctiva is, as a rule, no vesicle, but a flat, nodular, cellular infiltration over which the epithelium is thinned and later is cast off.

In the nodule are found not only small polynuclear leucocytes but also cells of an epithelioid nature and even giant cells. Bacilli are not present and caseation does not occur, nevertheless the nodule may be described as of tuberculoid structure.

The endothelium of the vessels is in a state of proliferation, and it seems possible that the giant cells arise in the interior of the vessels, making it seem probable that phlyctenulæ of the conjunctiva are of endogenous origin.

SECOND SESSION, AUGUST 5TH. DR. EWETZKI PRESIDING.

Nagel, Bach, Hippel, and Leber demonstrated preparations, models, and drawings illustrating their papers.

4. HESS (Würzburg): **A new after-image phenomenon.**

When a luminous yellowish-red line is moved past the eye, one sees behind it a dark interval, then a bright bluish-green line, then a broad dark interval, then a bright broad line of the same color as the original line, and finally a very dark area with less dark surroundings.

If a break $\frac{1}{2}$ *cm* long is made in the middle of the line, one sees as its after-image a bright long stripe nearly complementary to the color of the luminous line, but gradually decreasing in luminosity so that it finally appears as a dark area in somewhat lighter surroundings. The essential point in the matter is that an area of the retina which has not been acted upon by any objective light acquires a light perception of considerable brightness

and duration, about ¼ to ½ second after excitation of neighboring areas by a moderately bright light.

Hess demonstrated an operating table which is supported by a single metal column, and through the medium of an oil pump may be raised and lowered by a simple movement of the foot.

He further demonstrated an accumulating hand lamp for focal illumination.

7. FRANKE (Hamburg): **Ocular lepra.**

Franke exhibited preparations from the eyes of a young man who had died of lepra, but had never complained of eye symptoms.

Macroscopically no changes were found, but microscopically there were the first signs of beginning lepra, consisting in accumulations of cells in the root of the iris and the region of the chamber angle. About the large vessels of these parts there were but few bacilli, and these were arranged mostly in small groups. Longitudinal tracts of cells in the sclera adjacent to the ciliary body contained no bacilli.

8. HEGG (Berne): **A stereoscopic ophthalmometer.**

This instrument serves chiefly to measure the depth of the anterior chamber by means of the projection of double dots, whose apparent distance apart can be altered by a micrometer screw.

THIRD SESSION, AUGUST 6TH. NORDENSON (STOCKHOLM) PRESIDING.

1. HESS (Würzburg): **The excitation of the retina from increased venous tension.**

Hess has studied experimentally the subjective light sensations occurring with sneezing, hard pressing, and the like. The sensations are readily produced by bending the head forward and making an expiratory effort with mouth and nose closed. Moderate pressure upon the eyes with the hands sufficed to prevent the appearance of the sensations.

He found that the sensations arising in this way generally took the form of four bright circumscribed spots whose location corresponded to the points of exit of the vortex veins.

2. SIEGRIST: **On little-known forms of optic-nerve disease.**

Siegrist calls attention to the fact that the Weigert hematoxylin stain reveals in a great number of optic nerves hardened in

Müller's fluid spots which stain diffusely black. Siegrist regards these as foci of inflammation.

Fuchs and Wagenmann in the discussion stated that these dark foci were doubtless artifacts due to faulty methods of preparation.

3. Pfalz (Düsseldorf): **On the development of myopic eyes in the young under the constant use of the full correcting glasses.**

Since Donders thirty-five years ago laid down the principles for treating myopia with glasses nothing has been changed. Förster's proposal seventeen years ago, to correct in full myopic eyes in order to prevent increase in myopia, has had few followers. For the past five years Pfalz has given the full correction for constant wear, sometimes prescribing a weaker glass for near at first, and gradually working up to the full correction. His patients have been followed up carefully and tabulated, and he finds that the increase in myopia is much less in persons wearing the full correction. He much prefers periscopic lenses, and always orders them when the myopia is above 2.5 D. The frames should be carefully fitted.

4. Heine (Breslau): **On the full correction of myopia.**

Heine believes, on the ground of theoretical and practical considerations, that myopia should receive its full correction, and the correcting glass should be worn for all purposes until the onset of presbyopia necessitates a weaker glass for near. It is now certain that accommodation does not affect intraocular tension, so increased accommodative efforts due to wearing the correcting glass for near cannot tend to increase the myopia. This is rather due to the pressure of the extrinsic muscles, whose deleterious action is favored when objects are held close to the eyes. Tabular statistics of a considerable number of cases show that the tendency to increase in the myopia is lessened by wearing the full correction for all purposes.

5. Salzmann (Vienna): **The choroidal changes in high myopia.**

In the atrophic areas, and sometimes outside of them, defects are found in the lamina vitrea, cleft-shaped or branched. Near the disc they mostly run concentric with it, and end in the foramen opticum choroideæ. They suggest the results of purely mechanical stretching, but one finds also in the choroid all the changes that we recognize as atrophy following inflammation.

There are, however, numerous small defects in the lamina vitrea, covered with pigment epithelium, little or not at all changed, and with the adjacent choroidal stroma showing no other defects than that of general stretching. This is doubtless the primary process. Then reparative processes begin, the pigment epithelium proliferates and often passes into the choroidal strata, and a low degree of inflammation takes place in the connective-tissue portion of the choroid. The scars so formed are points of diminished resistance, and give rise to new and larger dehiscences.

In the discussion of the three preceding papers, Dor, Hess, Wicherkiewicz, Hippel, Straub, Schwarz, and others advocated the full correction of myopia.

6. UHTHOFF (Breslau): **On eye changes following injury of the skull.**

Uhthoff reported two cases of fracture of the skull with effusion of blood at the base. The hemorrhages passed along the optic nerves both within the dural sheath and without. In both cases, some hours after the injury, the picture of optic neuritis appeared with great venous congestion and pronounced œdema of the disc. At the autopsy in both cases much blood was found in the dilated nerve sheaths.

FOURTH SESSION, AUGUST 6TH. DR. SCHREIBER (MAGDEBURG) PRESIDING.

Various specimens were shown, and NIEDEN (Bochum) demonstrated a tattooing needle on the principle of the fountain-pen. As tattooing material he uses the retinal pigment of the ox's eye.

FIFTH SESSION, AUGUST 7TH. DR. BACH (MARBURG) PRESIDING.

1. DIMMER (Graz): **On photographing the fundus.**

One half of the pupil is used for the illumination and the other for the emergent rays. Reflexes are avoided by regulating the incidence of the light and by arranging the relative positions of the two objectives used, the inverted image formed by the second objective being photographed. The photographs exhibited were 45 *mm* in diameter and represented a field of about 6½ disc diameters. Photographs of both normal and pathological fundi were exhibited.

2. VOSSIUS (Giessen): **On siderosis bulbi.**

The introduction of the sideroscope and the magnet have greatly simplified the diagnosis and therapy of iron splinters in

the eye, but still cases occur in which the presence of small splinters is overlooked. The patient presents himself only when visual disturbances have come on, due to the siderosis—the entrance of iron in solution into the iris, lens, retina, and cornea. The clinical picture is so characteristic that one can at once proceed to a magnet operation. The iris takes on a greenish or brownish discoloration, and yellowish-brown spots appear on the anterior capsule of the lens. Sometimes the discoloration may gradually pass off.

Apart from the discoloration of the iris the author has noticed a spontaneous dilatation of the pupil in five cases. In two of these the pupil later became contracted and was very resistant to mydriatics.

3. HUMMELSHEIM (Bonn): **On uniocular diplopia in astigmatic persons.**

Hummelsheim studied three cases of uniocular diplopia in persons with regular astigmatism and no other ocular abnormalities. He believes that the cause of the diplopia lies in the cornea. In one case he concluded that the two lateral halves of the cornea were optically different, so that the rays falling upon them were deflected laterally. In the other patients the diplopia was limited to a semicircular area in the upper half of the field whose centre of curvature coincided with the point of fixation.

4. GRUNERT (Tübingen): **The lymph passages of the lids.**

Grunert followed the method of Gerota in injecting a solution of Prussian blue into the skin of the lid. This fills first the superficial network of the lymph spaces and capillaries which pervades the subcutaneous fatty tissue between the skin and the orbicularis muscle. Among the muscle bundles numerous canals pass to a second network which lies on the tarsus. The exit channels have deep and superficial origins, but both end jointly in the same lymph gland. The nasal half of the lid has two superficial and one deep vessel of exit which follow the course of the anterior facial vein and enter two submaxillary lymph glands lying at the point where the vein passes over the edge of the lower jaw. The outer half of the lid sends its lymph by two superficial and three deep vessels into two of the upper parotid lymph glands. From the upper parotid lymph glands short communicating channels run to the nearest lower glands. This description serves for the upper as well as the lower lid.

5. BERNHEIMER (Innsbruck): **Remarks on tobacco-alcohol amblyopia and on reflex nystagmus.**

Bernheimer has examined twenty cases of beginning tobacco-alcohol amblyopia, in the majority of which the patients complained of no pronounced defect in vision.

The field of vision was taken because the outer half of the disc was slightly hazy and the vessels obscured. There was no pallor, but rather a slight hyperæmia.

6. Bernheimer: **Reflex nystagmus.**

Two persons with normal vision and hyperopia, 1. D in one case and 3. D in the other. In one, twitching of the eyes came on after long reading. This ceased when the correcting glass was worn. In the other, the drawing back of the upper or lower lid would bring about nystagmus. The longer the lid was retracted and the dryer the cornea became, the more rapid was the nystagmus. This is due to excitation of the end twigs of the fifth nerve conveyed through the posterior longitudinal bundle which unites all the nerve nuclei both in centripetal and centrifugal directions. Zehender saw nystagmus after instillations of eserine; this also was due to excitation of the fifth.

7. Römer (Würzburg): **Notes on the action of iodoform in intraocular infections.**

Römer reports three cases of intraocular infection in which iodoform was introduced into the anterior chamber.

In the first case, one of staphylococcus infection after a myopia operation, there was complete recovery, and $V = \frac{6}{9}$ was obtained.

In the second case, a perforating injury from a bit of stone, with traumatic cataract and beginning panophthalmitis, the iodoform was efficacious and the panophthalmitis passed off. This also was a case of staphylococcus infection.

In the third case there was infection with a peculiar bacillus after a cataract extraction, and the clinical course did not resemble that of purulent infection. Iodoform was of no service.

8. Emanuel (Leipsic): **The relation of tumors of the optic nerve to elephantiasis neuromatodes.**

The author regards the tumors of the optic nerve as belonging to the group of elephantiasis neuromatodes. He believes that almost always there are, besides the evident tumor of the nerve, other tumor nodules within the cranium, and thus it happens that months or years after the operation the patient dies with cerebral symptoms.

REPORT OF THE TRANSACTIONS OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, JUNE 13, 1901.

By C. DEVEREUX MARSHALL.[1]

G. ANDERSON CRITCHETT, M.A., F.R.C.S.E., PRESIDENT, IN THE CHAIR.

Study of inflammatory exudates into the vitreous.

This paper was read by Dr. LESLIE BUCHANAN, and was illustrated by lantern slides made from his preparations.

In the course of his remarks he said that the exudate into the vitreous in cyclitis is, in the first instance, formed in the pars ciliaris retinæ, and more especially in the non-folded portion of it, but soon the folded portion, the fibrous stroma of the ciliary body, and the retina take part in the production of the inflammatory exudate. The exudate into the vitreous body is seen in the fresh specimen in five-per-cent. formalin as opaque white flocculent masses. It may be divided into zones, which from the ciliary body inward are as follows, viz. : (1) a fibrous zone ; (2) a fibrinous zone ; (3) a fibrino-cellular zone.

The formation of fibrous tissue begins very early, probably about the eighth day. The formation of fibrous tissue is accomplished by the action of certain oval nuclei on the fibrin ending in the formation of fibrous tissue. The cells which form the exudate at first form masses on the non-pigmented layers of the pars ciliaris retinæ and are of various characters. That these cells are not all derived from the endothelium is shown by bleaching and restaining, when many cells may be seen migrating through the pigment layer to the free surface. In the retina also there is evidence of migration. The cells thus exuded pass to a greater or less depth

[1] This report had been omitted in the previous volume by mistake.

into the vitreous. Here they proliferate rapidly. In the more superficial portions of the exudate degenerated protoplasm may be seen not having a nucleus, though no instance of mitosis has been seen. Fatty degeneration follows, and further migration of nuclei takes place, these finding their way back by the lymphatics.

A fibrinous cyclitic membrane is thus left infiltrated with fat and highly vascular. The fat is absorbed, the blood-vessels are gradually constricted, leaving a comparatively vascular fibrous-tissue layer, by the contraction of which the eye is distorted and destroyed. A further change is the formation of true bone. Spherical globules are formed which grow, forming a solid mass penetrated by blood-vessels and finally converted into bone. The bone corpuscles are probably fibrous-tissue corpuscles. The cavities of the bone are lined by osteoblasts containing blood-vessels, fat, and crystals of fatty acids.

Case of **paralysis of the third nerve with unusual complications.**

This case was reported by Mr. MULES. The patient was a man aged seventy-five, who, feeling ill on May 4th of last year, proceeded to treat himself on the following original plan: He first took half a box of "wind pills," together with a variety of other sorts. Feeling no better, he took two ounces of a solution of tartar emetic. The vomiting having ceased two days later and feeling his head very sore, he applied to his forehead and scalp various applications chiefly used for veterinary purposes. He became so much worse that Mr. Mules was sent for. Incisions were then made into the œdematous scalp and ten grains of calomel were given. The following day, May 10th, patient was better, though sloughs covered the scalp and there was severe pain. It was then noticed that there was paralysis of the third nerve. On May 27th, the scalp had healed but the paralysis remained. The author thinks that the original cause of the trouble was herpes of the fifth nerve. This was the cause of the patient feeling ill in the first place. The vesicles were never seen on account of the applications, which caused so much destruction of tissue. As a sequel to the herpes, paralysis of the third nerve ensued.

Mr. DEVEREUX MARSHALL referred to an exhaustive paper on herpes by Head and Campbell published last year in *Brain*.

Dr. ALDREN TURNER saw no reason why the third nerve should not be affected, and did not consider motor paralysis uncommon after an attack of this disease.

Mr. MARCUS GUNN asked if there had been an injury, and mentioned a case in which an attack had definitely followed such.

Mr. JOHNSON TAYLOR asked if any vesicles had been seen on the cornea, and in reply Mr. MULES stated that none had been observed.

Mr. MULES also recounted a case of **double symmetrical opacities of the cornea.** The patient, aged seventy, developed opacities of the cornea eight years ago. These were symmetrical and brownish in color and had been increasing. The apices were at the pupils and their bases at the corneal margin. A vertical slit was present in each. One was removed by scraping, but the other was removed far more easily by means of a fine knife inserted beneath it. The result was quite satisfactory.

The PRESIDENT had watched a similar case for seven years, but it had not reached the pupil and he had done nothing to it at present.

Dr. W. H. A. RIVERS described a form of **erythropsia** which appeared after exposure to high illumination as a well-defined deep-red border round a white object. The phenomenon may be regarded as an intermediate link connecting the ordinary forms of erythropsia with the transient red border seen round a white object which has been described by Shelford Bidwell.

It was shown that Bidwell's phenomenon, "border erythropsia," the artificial erythropsia of Fuchs, and clinical erythropsia, such as occurs after the removal of the lens, are probably closely related to one another.

The causation of erythropsia in general was considered and reasons were given for believing that all forms are due to the coloration by the light stimulating the retina by blood, and this may be produced in several ways: (*a*) by transmission through the sclerotic, etc.; (*b*) by internal reflection from the lateral walls of the eyeball; (*c*) by transmission through the anterior layers of the retina. The experiments of Birkhoff show that erythropsia may occur when light is prevented from passing through the peripheral part of the eyeball, but these experiments do not exclude the third of the sources above mentioned.

Remarks were made by Dr. EDRIDGE-GREEN and Mr. SWANZY.

Dr. RIVERS briefly replied.

Two cases of **eye injury due to lightning** in South Africa.

Major M. T. YARR contributed these two cases and stated that while encamped in the Orange River Colony in March, 1900, they were exposed to a violent thunderstorm. Major H—— had his tent pole struck ; at the same time he felt tingling down the right side of his head and right arm. He became partially unconscious, but soon recovered, yet the tingling persisted for some days. Four months later he discovered accidentally that he was practically blind in the right eye and was invalided to the base hospital. When seen by the author in August, 1900, he could only count fingers at three feet. There were several large hemorrhages, evidently not of recent date, and patches of atrophy in the retina in the region between the superior and inferior temporal veins, with a few scattered and much smaller hemorrhages in the periphery, some engorgement of the veins, pallor of the discs, and contraction of the arteries. The left eye was normal.

CASE 2.—Richard C——, aged twenty-five, a private in the 2d Royal Berkshire Regiment, was employed on telephone duties at Belfast, Transvaal. On October 18, 1900, he was sitting at his "operating table" during a storm, when his instrument was struck by lightning. He fell, and on regaining consciousness he was unable to see. He had sustained no bodily injury, but his instrument was bent. The next day he could distinguish between light and dark ; about a week later he had perception of light in both eyes and could count fingers with the left. Tension was normal.

There was a large retinal detachment in the right eye running in wavy whitish lines inferiorly. The left eye also showed a large detachment, but spread over a wider area. The vision had been previously quite good.

The following card specimens were shown :

Dr. A. BRONNER : **Growth of the conjunctiva from an old man.**

Dr. A. A. HUDSON : **An apparatus for performing massage on the eye by means of a vibrating hammer.**

Major H. E. DRAKE-BROCKMAN : **A new eye speculum.**

Mr. J. H. FISHER : **Subretinal cystic swelling in the centre of the fundus.**

Mr. INGLIS TAYLOR : **Tubercle of the iris.**

Mr. RICHARDSON CROSS : **Congenital fibro-vascular tumor removed from the eye.**

Mr. STANFORD MORTON : **Double coloboma of the lens.**

Mr. DOYNE : **Hole in the retina.**

MEETING OF OCTOBER 17, 1901. DAVID LITTLE, M.D., F.R.C.S.E., PRESIDENT, IN THE CHAIR.

The PRESIDENT took as the subject of his presidential address some clinical experiences of **primary chronic glaucoma** and **the value of iridectomy.**

After giving tribute to von Graefe for the benefit he had conferred on mankind for the treatment of glaucoma by iridectomy, he stated that we were still following his steps. Myotics certainly had been introduced since his day and were of considerable value but their action in his opinion was purely palliative and not curative. Iridectomy was the only known cure for this disease, which is so fatal to eyesight. The pathology of it has been so much elucidated in late years by the researches of Brailey, Priestly Smith, Nettleship, and Treacher Collins that we now have a rational idea as to how iridectomy acts. He then said: It is difficult to follow up cases years after operations, but only in this way is it possible to draw accurate conclusions. Between the years 1886 and 1894 I operated upon sixty-seven cases. Of these, eleven are dead, nineteen are not to be found, while thirty-seven have been traced. Of these, ten have become blind, one from atrophy of the globe, one from recurrence of the disease, and eight from optic atrophy, while in all but one the tension is normal. In four of the remaining, atrophy was going on, while in twenty-three the vision was better than when the operation was performed, in others it was the same, and in a few it was a little worse. That is to say, 62 % held their ground from seven to twelve years after the operation, while with one exception the tension was normal. He was therefore of opinion that in the majority of the cases iridectomy does reduce tension permanently. He operated on a patient in 1887 in his only remaining eye when the vision was $\frac{6}{9}$. A few months ago he saw the patient and he had seen quite well ever since; the fields, however, had undergone contraction to 10°. Another successful case he had followed for nineteen years. In a case he had operated on for acute glaucoma the patient retained good vision for the rest of her life, which was twenty-seven years.

He thought that an operation should be done on every case in which the patient was strong enough to stand it, and the earlier it were done the better, but he would never hesitate to operate on an eye even if the field were contracted to fixation, provided there was any vision worth saving. Even in the premonitory stage he advocated operation.

Mr. NETTLESHIP, in moving a vote of thanks to the President for his address, said how cordially he agreed with the views he had expressed.

Mr. SILCOCK seconded this.

Mr. S. JOHNSON TAYLOR read some notes on a case of **rodent ulcer** of the cornea of a child. This condition is rare at any age but it is particularly so in children. The patient here described was aged three years. When first seen it resembled and was taken for a phlyctenula of the cornea, and was treated with atropine and yellow ointment, and iron was given internally. A little later there was some discharge, but the palpebral conjunctiva was quite smooth. He then left off the atropine and used yellow ointment and painted the patch with nitrate of silver, five grains to the ounce; this was increased to ten grains, but still the ulcer spread. He then gave an anæsthetic, when the upper third of the cornea was found to be ulcerated and vascular with a gray infiltrated part below. There was no iritis or hypopyon. He scraped the surface and painted it with pure carbolic acid, and used quinine lotion, atropine, and iodoform. It then steadily improved and healed. In all such cases it is necessary to use strong remedies, and the benefit obtained was well illustrated by the ready way in which this ulcer yielded to the treatment when it had successfully resisted milder measures.

Mr. LINDSAY JOHNSON said that although the disease was very rare in man, yet he had seen a large number of cases in **young bears**, in **lions**, and in **rats.** In lions and in bears he always applied either pure carbolic acid or solid stick of nitrate of silver, and this usually arrested the ulceration. He had always found a micro-organism present, and he asked whether in the case under discussion there had been any contamination with animals.

Remarks were made by Mr. NETTLESHIP and Mr. CARGILL.

Mr. JOHNSON TAYLOR in reply stated that he considered the condition microbic in origin, and that his patient had certainly not been in contact with wild animals, nor, as far as he knew, with rats either.

The following **card specimens** were shown:

Mr. MARCUS GUNN: **Double keratitis** without tendency to ulceration, in which several members of the family were affected. There was no suspicion of syphilis, but a marked history of consanguinity.

Mr. LINDSAY JOHNSON: **A case of deep-seated infective conjunctivitis.**

Mr. SYDNEY STEPHENSON: **A case of congenital distichiasis.**

Mr. TREACHER COLLINS: **A case of Mooren's ulcer of the cornea,** six years after the disease had first started.

Mr. N. BISHOP HARMAN: (1) **Case of paresis of the third nerve,** in which, on lifting the drooping lid, there is coincident drooping of the sound lid. This occurred in a man aged thirty-five years, and has been present three months; probably syphilitic in origin. (2) **Choroidal angiosclerosis** with pigmentary degeneration.

Mr. C. W. ROLL: **Congenital patch of pigmentation in the fundus oculi.**

M. CARGILL: **Sclero-corneal dermoids in both eyes.**

Mr. SILCOCK: **Primary chancre of eyelid in an infant.**

REPORT OF MEETINGS OF THE OPHTHALMOLOGICAL SECTION OF THE NEW YORK ACADEMY OF MEDECINE.

By Dr. HENRY H. TYSON, Secretary.

MEETING OF OCTOBER 21, 1901.

PRESIDENT DR. JOHN E. WEEKS IN THE CHAIR.

Dr. A. Schapringer presented a case of **amblyopia from inhaling the fumes of wood alcohol,** with the following history. He stated that the patient had been under the care of Dr. Louis Lichtschein, of this city, and could be regarded practically as a case of recovery from this serious affection.

George W., twenty-one years old, in regard to his habits a total abstainer, had for several years made a living by varnishing beer vats in breweries. Toward the end of the month of June, 1901, he had work of this kind in a brewery in Hoboken. The shellac used for this purpose is dissolved in alcohol. He noticed that the substance placed at his disposal at this time had a disagreeable, sickening smell. This was due to the fact that the shellac was dissolved in methyl, or wood alcohol. Previously he had always worked with shellac dissolved in so-called grain alcohol. He worked consecutively for five days, from June 25th to June 29th inclusive, the weather being extremely hot. On the second day of his work he began to notice occasional flashes of light before his eyes. This phenomenon repeated itself on the following days. At times a fog would seem to rise before him. By and by dizziness, headache, nausea, and eructations supervened, and he became prostrated. He also began to complain of "weakness of vision." Dr. Lichtschein, who was then called to see him, ordered ice to be put to his head, rest in bed in a dark room, salicylate of potash in statu nascenti, and tincture of nux vomica.

July 4th.—Pupils dilated, not reacting to the stimulus of light. Distinguishes movements of the hands only in the peripheric portion of the outer and lower quadrants of the visual field, in either eye. Tincture of nux vomica, fifteen drops three or four times a day, was continued. This was the only drug given during the whole course of subsequent treatment.

July 6.—Ophthalmoscopic examination by Dr. Schapringer: the outlines of both optic discs indistinct, the color of the disc a milky white, their texture opaque, the calibre of both arteries and veins reduced below the normal. Pupils somewhat narrowed, responding only a little to light. Patient cannot guide himself in his room. The pupils continued narrow for a few weeks. There was no pain on moving the eyeballs or on pressing them backward with the fingers.

In a few days movements of the hands could be perceived throughout the entire periphery of the visual fields, but there was a large central scotoma in either eye.

The borders of the optic discs in the course of the following weeks became distinct again. The color of the disc of the right eye became the milky white of atrophy. In the left eye only the temporal half of the disc assumed this color, the nasal half became again normal in appearance. The vessels, both arteries and veins, remained narrow, in the left background slightly less so than in the right.

The large central scotoma became less and less, so that the patient became able to guide himself and recognized persons. The sight of both eyes had become quite satisfactory, when one day, about six weeks after the first onset of the trouble, while on a visit to Hoboken, he suddenly noticed that the sight of the right eye, which had been, up to that time, making the same good progress as the left, had become considerably dimmed again. When next examined, it was found that the sight of the left eye was $= \frac{20}{40}$, while with the right he could only count fingers at about eight feet. Vision has since improved in the left eye to $= \frac{20}{30}$, in the right to counting fingers from ten to twelve feet. There is a small central scotoma for colors in the left eye, and a considerably larger one in the right.

Holden's theory, based on experimental researches on the dog, that the proximate cause of methyl-alcohol amblyopia lies in the degeneration of the ganglionic cells of the retina, has been recently corroborated by the results of investigations made on rabbits and

chickens by Birch-Hirschfeld of Leipzig, Germany. In connection with this theory, it is of importance to note that recent experimental researches carried out by Goldscheider and Flattau tend to prove that degenerated ganglionic cells may recover their healthy structure. This discovery furnishes a convenient explanation for the improvement of sight observed in a few of the cases of methyl-alcohol amblyopia observed hitherto, including the case here related.

Two cases of methyl-alcohol amblyopia from the inhalation of the vapor have been observed by Patillo and described in the *Ophthalmic Record*, December, 1899. More recently, G. E. de Schweinitz has published a case of methyl-alcohol amaurosis, the pathway of entrance of the poison being the lungs and cutaneous surface (*Ophthalmic Record*, June, 1901, p. 289). Dr. C. J. Kipp has also observed a case of methyl-alcohol amaurosis where the poisoning was caused by inhalation. The patient made a perfect recovery. This case has not been published as yet.

Dr. Schapringer was asked by Dr. WEEKS why certain parts of the field of vision were preserved while others were not. Dr. SCHAPRINGER replied that certain ganglion cells might be affected and other cells not.

Dr. SEABROOK did not think that such an explanation should be accepted as authoritative, as in locomotor ataxia and other cases you may get a similar field, and such cases were not considered cases of ganglionic degeneration.

Dr. MEIERHOF referred to cases recently published in the daily press where vision was injured by drinking Jamaica ginger which contained wood alcohol.

Dr. HUBBELL, of Buffalo, N. Y., in a statement referred to a paper read by Dr. Swan Burnett on the same subject and then related the history of a case seen by himself. The patient was seen in June with vision a little more than mere perception of light, pupils dilated but responsive to light; ophthalmoscope showed optic neuritis; patient became rapidly blind, and no treatment was of any benefit. Dr. Hubbell considers methyl alcohol an active poison, affecting certain nerve tissues of the eye. He thinks the trouble lies in the ganglion layer of the retina.

Dr. LEWIS referred to a case seen by him with symptoms similar to those of the foregoing cases. This patient drank the wood alcohol. Under large doses of strychnia given hypodermically, the vision improved, but later relapsed.

Dr. WEEKS thought that the defective vision was due to the immediate effect of the poison on the ganglion nerve cells of the retina.

Dr. SCHAPRINGER stated that in his case the treatment consisted simply of giving strychnia in the form of nux vomica.

Dr. SEABROOK presented a case of **late infection after cataract extraction.** The eye was operated upon for cataract, the wound healed the next day. Everything went well until the twelfth day, when infection manifested itself, and lasted about three weeks, when the eye cleared nicely, and with a secondary operation he expected to obtain a fair result. He thought that the low vitality of the patient might be considered as the cause of the late infection.

Dr. SEABROOK presented a patient with a **peculiar neoplasm of the conjunctiva.** It appeared like a gelatinous tumor of the conjunctiva around the nasal side of the cornea, somewhat resembling mother-of-pearl in color. Eye otherwise normal in appearance. The patient had ethmoiditis. The nose and ethmoid were operated upon and the eye condition was somewhat improved. Dr. Dixon, who examined a specimen of the neoplasm microscopically, stated "that it was composed largely of loosely connected fibrous tissue with some myxomatous cells. The epithelium, which had the appearance of amyloid degeneration, did not react to the tests; beneath the layer of epithelium were found quite a number of thin-walled blood-vessels and a few round cells."

Dr. WEEKS stated that the condition appeared to be connected with the diseased ethmoidal cells. It was of a polypoid character, and was unique as regards his observation.

Dr. WEEKS presented a case shown some time ago to the section, for **restoration of the lower lid and cul-de-sac,** a large Wolff graft from the arm being used for the flap.

Dr. WEEKS presented a case **showing the good results which may be obtained in some cases of penetrating wounds passing through the ciliary body of the eye.** The wound extended through the cornea and sclero-corneal margin. All the tissues engaged in the wound were excised, and scleral sutures inserted. The wound healed nicely. Two weeks later the lens was removed. The fundus of the eye appeared in good condition with some vision, while the eye appeared quiet.

Dr. WEEKS presented a **patient who had had a foreign body**

in the interior of his eye. A piece of steel, $4\frac{1}{2} \times 2\frac{1}{2}$ *mm* in size, entered the eye at the sclero-corneal junction. The wound was enlarged three times before the steel was removed with the Haab magnet. V $\frac{6}{60}$. Background is clearing rapidly.

Dr. WEEKS presented a **specimen of neuroma of the retina,** obtained from an eye of a patient who had died of uræmic coma. When first seen the patient had Bright's retinitis; forty-eight hours later, detachment of both retinæ occurred. The tumor, which measured 0.75 *mm* x 0.5 *mm*, occurred in the nerve-fibre layer of the retina. It was composed of large cells resembling ganglion nerve cells and of nerve fibres. The cells were to some extent supplied with protoplasmic processes, some of which appeared to bear axis-cylinders.

MEETING OF NOVEMBER 18, 1901.

Dr. CHARLES STEDMAN BULL read a paper on **the class of cases of simple chronic glaucoma in which operation is not advisable.** He stated that his paper was limited to a discussion of the cases of simple chronic glaucoma which are not operable, and to their treatment by other means. The complete divergence of opinion as to the relative value of various methods of treatment in simple chronic glaucoma is probably due to a lack of precision in interpreting the real meaning of the various symptoms as they are observed in different cases.

Simple chronic glaucoma is a disease in many respects essentially different from glaucoma with excavation. The symptoms which are supposed to characterize the disease, viz., reduction of vision, narrowing of the field, and excavation of the optic disc, are not characteristic of the disease, for they are all met with in simple atrophy of the optic nerve. The unfavorable view sometimes taken of operative procedures in chronic glaucoma is often due to errors in diagnosis. The distinguishing sign is increase of intraocular tension. Without this increase of tension there is no glaucoma.

In making a diagnosis, we should carefully observe the existing conditions of the angle of the anterior chamber, which varies in the different refractive conditions. A careful and repeated study of the field of vision in these cases is necessary, and the examination should be made with white or gray objects under small visual angles, in order to detect scotomata which are often the forerunners of peripheral defects. The condition of the iris and its

reaction to myotics often furnish a good prognostic guide for operative interference.

The study of the optic disc in chronic glaucoma is often misleading, and it is important to differentiate if possible a physiological excavation in an atrophic disc from a glaucomatous excavation.

The question of tension is the most difficult to settle. Simple chronic glaucoma should always be operated early in the disease, before much contraction of the field has occurred. The earlier the iridectomy is done, the more certain the effect; and, done early, it offers the best prospect for the arrest of the process.

In advanced chronic glaucoma, with great contraction of the visual field, marked impairment of vision, undoubted increase of tension, and deep cupping of the disc, the prognosis for operation is distinctly unfavorable. In those cases in which the contraction of the field has approached close to the fixation point, even though the central vision be still good, iridectomy is positively contra-indicated; for the contraction of the field is not arrested, it is often made immediately worse, and may be followed by total loss of central vision. Such cases should be treated by solutions of eserine (gr. $\frac{1}{10}$ to $\frac{1}{4}$) and cocaine (2 grs.), alternating with pilocarpine and cocaine used in the minimum amount and with the minimum frequency. Gentle massage often does good in deepening, at least temporarily, the anterior chamber. All refractive errors must be totally corrected by glasses. The habits of life of the patient should be regulated, all excesses avoided. The eyes should be used as little as possible. Salicylate of sodium should be given, alternating with potassium iodide.

Dr. C. J. KIPP's paper on **iridectomy in glaucoma** was read by Dr. W. P. Eagleton. Dr. Kipp stated that his views as to the value of iridectomy in acute and subacute inflammatory glaucoma did not differ from those of most writers on the subject. He believed in operating in the premonitory stage, and advised operation even in cases in which perception of light had been absent for some days. The earlier the operation is performed the better will be the result. If both eyes are suffering from acute inflammatory glaucoma when first seen, he operates first on the worse eye, and if this is followed by normal healing, he operates on the other eye a few days later. He instills a one-fourth per cent. solution of eserine sulphate in both, and regards the one least affected by the drug as the worse of the two eyes. He has several

times operated upon both eyes at one time, and has had no reason to regret doing so. For several years past he has instilled eserine in the sound eye while the patient was under treatment, and since then he has had no cases in which the sound eye developed an attack of glaucoma very soon after the operation on the first eye. He referred to the practice of some operators of operating on the second eye if this shows only sign of a disposition to glaucoma, such as a markedly shallow anterior chamber; and to Dr. de Schweinitz's paper recommending a prophylactic iridectomy under the same circumstances. Bearing in mind the accidents that have occurred to him and other operators in eye operations, he would hesitate to urge upon his patients a prophylactic iridectomy, unless they were obliged to go to some remote region where competent treatment could not be had. He regards iridectomy as the best remedy also for the chronic form of inflammatory glaucoma, although the result obtained by it is at the best an arrest of the disease. Cloudiness of the media existing at the time of the operation will of course be removed by it, and the impairment of vision due to this will disappear. In many cases of this form we cannot hope for a permanent reduction of the increased tension. In a few, especially if the impairment of vision is great, and the defect of the visual field approaches the point of fixation, and the excavated papilla is of atrophic appearance, greater impairment of vision and even total blindness have followed the operation. In this form, the so-called malignant glaucoma has occasionally developed shortly after the iridectomy. In glaucoma simplex, the iridectomy is indicated if the eye shows an appreciable increase of the intraocular tension, if central vision is good, and if the visual field is not much contracted. It must be admitted that the operation here never restores the vision that has been lost, or restores the field of vision; all that we can hope for is to arrest the progress of the disease and to restore a normal intraocular tension, and even this the operator not infrequently fails to accomplish. Nevertheless, there is no doubt in his mind that in many cases of this form, in which he was permitted to operate in the early stage of the disease, the advance of the disease was checked for many years; and he asked what other remedial measures there were that would do as much. He knew of none. He had tried sclerotomy and myotics, but the results were so discouraging that he now advises the patients not to waste time by using myotics, but to submit to the operation before there is much contraction of the field

of vision. Some impairment of vision after the operation is due to the large coloboma and the astigmatism caused by the operation, and it is well to prepare the patient for this before the operation is undertaken. In this form, as in the chronic inflammatory form, greater impairment of sight, sometimes blindness, will follow the operation in cases in which the defect of the visual field is great and reaches near the point of fixation, and in such cases he does not urge the operation, but explains to the patient's relatives or friends the natural history of the disease, the chances of benefit, and the possibility of disaster following the operation, and leaves the decision as to what is to be done to them.

He usually operates the acute inflammatory form of glaucoma under general anæsthetics. He prefers the use of a narrow cataract knife and endeavors to make an incision of eight *mm* in length in the sclera. He cuts the iris as close as possible to its ciliary insertion, and takes great care to prevent the iris becoming entangled in the angles of the wound. In cases attended by great chemosis, he first tries eserine, and if this causes marked contraction of the pupil, he delays the operation for a short time for the subsidence of the chemosis. The after-treatment is very simple: he places an aluminium shield over the operated eye and leaves the other one open. The eye is dressed daily and a drop of sulphate of atropine is instilled. The patient is kept in bed until the wound is closed. Under this treatment patients have been much more comfortable, and the healing of the wound has progressed as rapidly as formerly when he kept both eyes bandaged until the wound was closed. In cases of simple glaucoma in which the iridectomy failed to arrest the progress of the disease he has made a second operation, and preferably beside the first. He has also done this a number of times in cases of acute inflammatory glaucoma, in which the shallowness of the anterior chamber prevented the making of a sufficiently large incision, with gratifying results.

Dr. DAVID WEBSTER read a paper on **sclerotomy anterior and posterior, its indication in glaucoma, and the method of operating.** He stated that in regard to sclerotomy anterior he had very little to say, as he had performed the operation in a very few cases years ago, and with so unsatisfactory results that he had abandoned it. Still there seems to be a general impression among his colleagues that the operation of anterior sclerotomy has come to stay; that it has a place in ophthalmic

surgery, and that it should be resorted to in hemorrhagic glaucoma especially. He thought it might be advantageously resorted to in acute or subacute glaucoma supervening upon nephritic retinitis. In his experience iridectomy failed to relieve the tension and arrest the disease in the cases referred to. The operation amounts to little more than a large paracentesis. There is no doubt that it will bring about a lessening of the tension of the eye, at least temporarily. There is also little doubt that irridectomy is the better operation in most cases of glaucoma. As to the method to be pursued in operating, probably that described by DeWecker was as good as any. Those who wished to know what was worth knowing of the history of sclerotomy, anterior and posterior, were referred to Dr. Knapp's article on "The Operations Usually Performed in Eye-Surgery," in Norris and Oliver's *System of Diseases of the Eye.*

As to sclerotomy posterior in glaucoma, his experience had been restricted to a single case; but the result of the operation in that case was so gratifying that he felt justified in giving a report of the case in full.

On February 27, 1901, he was called to see Mrs. A., a lady in her 90th year. He found that she had chronic glaucoma, supervening upon retinal hemorrhages and hemorrhages into the vitreous, which had been observed by another ophthalmologist some months previously. The vision was reduced to perception of light. The pupil was slightly dilated and sluggish, the anterior chamber rather shallow, the tension a little increased, and, notwithstanding the turbidity of the vitreous, the optic disc could be seen to be cupped and atrophic-looking. There was no pain, however, and no redness of the eyeball; the only thing the patient complained of being the loss of sight. He advised the moderate use of the other eye, which was normal, and gave her a prescription for a two per cent. solution of pilocarpine, to be dropped into the eye in case there should be pain. He was sent for again two weeks later (March 13th). The patient informed him that a few days previously she had become interested in a new edition of Boswell's *Life of Johnson*, with copious fine marginal notes, and had read it nearly all in a day. At night the eye began to be painful, and notwithstanding the use of the pilocarpine eyedrops the eye had got worse and worse. He found the eyeball deeply injected, no reflex from the fundus, no perception of light, the tension more increased than when he first

tested it, the pupil more dilated, and the anterior chamber nearly obliterated. He put the patient upon eserine, cocaine, and iced cloths. Her general condition was looked after in consultation with her family physician. He would have performed an iridectomy as soon as possible, but in order to accomplish that anæsthesia by ether or chloroform would have been necessary. On account of the great age and extreme feebleness of the patient, both the family physician and he were unwilling to assume the risk. All the measures resorted to, local and general, failed to relieve the pain, and it became evident that something must be done in the way of an operation, else the patient would die of exhaustion from pain, sleeplessness, anorexia, and inanition.

Although he had no experience with posterior sclerotomy, except in detachment of the retina, he determined to try it in this case, if he could obtain the patient's consent, because (1) it would not require any considerable amount of self-control upon the part of the patient, (2) because he knew that under cocaine the pain caused by the operation would be comparatively slight, and (3) because he had heard and read of cases in which posterior sclerotomy had relieved the pain and quieted the eye. Accordingly, on March 27th, two weeks after the onset of the attack, and assisted by her family physician, having dropped some of a six per cent. solution of cocaine into the eye half a dozen times at intervals of three or four minutes, and having washed the eye with a solution of hydrag. bichlor. 1 to 5000, he made a meridional incision through the eye-wall between the insertions of the external and inferior recti muscles. Holding the eye open with the index and middle fingers, for he knew that speculum and fixation forceps would not be tolerated, he punctured the eye-wall just back of the ciliary region and extended the incision as he withdrew the knife so that it was about three times as long as a Graefe's cataract knife is wide. Some fluid escaped as he withdrew the knife, but apparently only a few drops. A bandage was applied and, to the gratification of all concerned, as soon as the immediate, slight hurt of the operation had passed off, the pain in and about the eye ceased. He washed and rebandaged the eye daily, but used no mydriatic or myotic. On the eighth day, as the wound seemed sufficiently healed, he removed the bandage, but as there was some pain on the following night he reapplied it and the pain ceased. He kept up the bandaging nine days longer and then finally discarded it. There was no more pain. The eye con-

tinued to grow whiter, and the general health of the patient improved. He saw her last on April 25th, when the eye looked about as white as the other. At the site of the wound was a delicate, slightly dark-colored, linear scar that was hardly noticeable.

Dr. C. W. CUTLER read a paper on **the relations of the sympathetic nerve to the eye in glaucoma, with the report of a case of excision of the ganglion.** The history is that of a patient whose condition was studied for nine months, four years ago; during that time, in spite of myotics, anterior sclerotomy, and iridectomy, his vision failed so steadily that ultimate blindness seemed inevitable. Five months ago he came under observation once more with hardly enough vision to find his way about. Excision of the superior cervical ganglion has restored vision to nearly normal, where it has remained for more than five months.

A. G. R., aged fifty-six years; several members of his family became blind from unknown causes. He has had muscular rheumatism and facial neuralgia for years. There is marked anterior sclerosis. The heart and kidneys are normal. Glaucoma began in 1893, acutely with severe pains in both eyes. Erythropsia has been a prominent symptom, not only after fatigue or exposure to bright light, but often in the dark and on awakening. In relative scotomata at the edges of absolute scotomata and the margins of the field where vision was variable, the test object, white or colored, was seen red.

These phenomena were lessened by eserine and pilocarpine, and after sclerotomy they vanished for a time. Later they reappeared. Now, since the sympathectomy, the subjective sensations are absent but the red edges of scotomata are constant.

Color perception is normal. Night blindness has been a prominent symptom. Improvement with adaptation has been slight, and continued work has been impossible. Perception of least differences (Unterschiedempfindlichkeit) has been considerably below the normal. At times nyctalopia was present.

April 30, 1897.—V R, $\frac{20}{100}$; in both eyes T + 1. Pupils normal in size and reaction, anterior chamber and iris normal, media clear, retina and choroid of normal appearance, vessels rather narrow, nerves excavated to a depth of about 3D, vessels lost at edge. The field of vision of the right eye showed a loss of nearly the upper half of the field, with much-contracted color fields.

May 2d.—After eserine for three days, V O D, $\frac{20}{30}+$; O S, $\frac{20}{40}$. Tn. in both eyes. Eserine was given, alternating occasionally with pilocarpine, but vision failed at the end of two months to $\frac{20}{100}$, to be restored by anterior sclerotomy to $\frac{20}{20}$ in both eyes. After three months it failed again.

December 29th.—V O D, $\frac{15}{200}$; O S, $\frac{10}{200}$.

Iridectomy on the right eye, helped less than the sclerotomy, and shortly after this the patient disappeared and was not seen until June 2, 1901, when with the right eye, fingers were counted at three feet, T + $\frac{1}{2}$ to + 1; in the left eye, absolute glaucoma; T + 2.

June 5, 1901.—After eserine for three days, VOD, $\frac{20}{200}+$ O S, 0.

The field of vision was narrowed upwards to 8° and down in to 10°. Colors uncertainly seen within 10° of fixation point only. The superior cervical ganglion of the right sympathetic and a portion of the nerve 5 *cm* in length were excised by Dr. C. L. Gibson on June 10, 1901. The incision was made in front of the sterno-mastoid. No change in the pupil occurred during the operation.

June 11th.—Right pupil slightly contracted, reacts to light.

June 12th.—T − $\frac{1}{2}$; vision $\frac{20}{30}-$; slight ptosis, difficulty in swallowing, choking sensation, pain in the left side of head and face, conjunctiva congested.

June 19th.—O D, Tn; V, $\frac{20}{30}+$.

Ptosis of right lid, retraction of left lid, sweating only on left side of face, slight enophthalmus, have remained. The right optic nerve has seemed less pale than before the operation.

Nov. 18, 1901.—Since leaving the hospital, vision has remained the same, $\frac{20}{50}$, at repeated examinations, under different conditions. About three weeks ago he read a few letters of $\frac{20}{15}$. Ptosis is less marked, otherwise there is no change.

The pathological examination of the excised ganglion is as follows:

Specimen 5 *cm* long, 0.5 *cm* in diameter. At one point, for 1.5 *cm* there is a thickening. Sections through the whole length of the specimen show large ganglion cells. In these cells the chromophilic bodies do not show the normal size and arrangement; many cells show small granules of pigment. A growth of connective tissue is between the ganglion cells. Nerve fibres are normal.

The secondary effects of the operation were paralysis of the right side of the larynx, the sterno-mastoid, and the right half of tongue. Reaction of degeneration was present. The symptoms gradually diminished so that four months after the operation there was no discomfort from them. The remainder of the paper was given to a review of the literature and to theoretical considerations.

DISCUSSION.

Dr. CALLAN stated that he did not agree with Dr. Bull as to the great difficulty in making a differential diagnosis between optic-nerve atrophy and glaucoma; that the excavation of the disc and the field of vision were quite different in each one. He places great reliance upon the color field, especially the red and green field. He prefers iridectomy as the best operation, and uses a lance-shaped knife. He does not like the large iridectomies, 8 *mm*, made with Graefe knife used by Dr. Kipp. He considers that too much has been done if the wound requires seven or eight days to heal.

Dr. FRIDENBERG stated that he endorsed Dr. Callan's remarks, and that he did not like large iridectomies. He considered posterior sclerotomy worthy of consideration as a preliminary to iridectomy in certain cases where both eyes were affected. He believes in repeated iridectomies if necessary, also that excision of the sympathetic might be used in absolute glaucoma instead of enucleation.

Dr. H. KNAPP stated that the second iridectomies sometimes cure certain cases where first ones had failed. The cystoid scar after iridectomy is due to an incarceration of iris in the wound. It was very essential to release the iris from the angles of the wound, but it was not possible in some cases, as a certain portion of iris would persistently remain in the angles. He advocated destroying the scar with a pointed burner of the galvanocautery, and stated that in doing so we could obtain a smooth scar in about one week.

Dr. GRUENING stated that his guide in chronic glaucoma was the color sense. If he found considerable impairment of the color sense he did not operate, as he considered that it then contained an atrophic element in it. In one case he had performed five consecutive iridectomies and had removed the entire iris, and the eye was now free from pain. He disagreed with Dr. Knapp

as to the use of the galvano-cautery and thought it was dangerous. He stated that he had used it in two cases, producing glaucoma in the other eye in one case, and sympathetic trouble in the other eye in the other case. He thought that the cystoid scar acted as a filtration area. He had had one case where the cervical sympathetic ganglion on the right side had been removed by Dr. Willy Meyer, the immediate effect of which was a complete aphonia which improved slightly later. But the condition of the eyes improved so that he considered in this case that the excision of the sympathetic was apparently successful.

Dr. H. KNAPP, in reply to Dr. Grüning, said he was well aware that the idea that the cystoid scar acted as a safety-valve in glaucoma was shared by many oculists. Nevertheless, he considered those cases best which healed without any reaction, and he endeavored to remove all complications or anything that might interfere with a smooth and even closure of the wound. The late Dr. Bader, ophthalmic surgeon to Guy's Hospital, London, has carried the infiltration idea to excess. He made a large peripheric wound, and left the protruding iris uncut in it. To support the recommendation of his method, he demonstrated, at the International Med. Congress (London), several glaucoma cases which, having large prolapses of iris, had not become blind.

Dr. GIBSON stated that he considered the operation for the excision of the sympathetic ganglion as comparatively safe and quite easy of performance. Dr. GRUENING inquired of him as to the method of the removal of the upper end of the ganglion, whether it was torn or cut out, as in his case it could not be reached with the scissors and had to be torn out. Dr. GIBSON stated that he cut out the ganglion with the point of the scissors against the base of the skull.

Dr. MARPLE stated that he had seen Dr. Cutler's case and that if the improvement was maintained it would be an excellent result, but, as a rule, judging from the cases reported, they all get worse later.

Dr. WEEKS said that in forty cases reported ten deaths had occurred, four being due directly to the operation.

Dr. CUTLER replied, he thought that in those four cases the entire chain of ganglia had been removed, which he considered a very dangerous proceeding.

MEETING OF MONDAY EVENING, DECEMBER 16, 1901.

DR. JOHN E. WEEKS, PRESIDENT, IN THE CHAIR.

Dr. R. DENIG read a **report of a case of conjunctivitis nodosa and presented a microscopic specimen.** The patient was a woman thirty-five years of age. A caterpillar—being the larva of the tussock moth—had struck the bulbar conjunctiva and the lower lid of the left eye, causing an inflammation which lasted over three months. The patient was first seen about four weeks after the injury. At that time there were many small nodules all over the lower part of the conjunctiva and the lid, almost every one of which contained an extremely fine hair discovered with the binocular loupe. In about three months the nodules disappeared, one after the other. The little hairs apparently were eliminated, as he frequently found them upon the surface of the conjunctiva and the lid.

The microscopic specimen showed a transverse section of a caterpillar hair in the centre of a little nodule, which was built up by epithelioid cells of various sizes and shapes. There were mono- and polynuclear leucocytes, lymphocytes, and giant cells, surrounded by fibrillar connective-tissue which formed a kind of capsule. Between its fibres at places there were round and fusiform cells and some lymphocytes. The immediate surrounding of the hair appeared to consist of an homogeneous zone, which does not stain with eosin or hæmatoxylin. He therefore was inclined to consider it a half necrotic albuminous substance. The poison of the caterpillar hair is presumably similar to the poison of bees and ants.

Dr. H. KNAPP said that he had observed one case which resembled a caterpillar ophthalmia nodosa but had been unable to prove it, as no microscopic examination was made. The nodules were most marked in the iris. The conjunctiva and sclera were swollen and red.

Dr. DENIG stated that in his case it was confined to the conjunctiva.

Dr. W. W. GILFILLAN read a **report of a case of spontaneous rupture of the globe, due probably to hemorrhage.** In his report he gave the following history of the case: M. F., female, French, aged eighty-seven, entered the French Hospital April 3, 1900. The patient was treated for paralysis agitans. Her mental

as well as physical condition was very low. He had been called in November, 1900, to treat her for a slight catarrhal conjunctivitis of both eyes. At that time he noticed senile cataract in each eye, as well as large opacities of the cornea, but there were no signs of staphyloma. The vision in each eye was very poor, being only $\frac{4}{200}$. In the course of three weeks she was cured of the trouble with the conjunctiva. On February 27, 1901, at three o'clock in the afternoon, she complained of a very sharp pain in the left side of her head. At this time she was in bed, although a short time before she had been to the toilet with an attendant. By the time the house surgeon, Dr. Thomassen, reached her, there had been a large hemorrhage from the globe of the left eye, much larger than one usually gets in an operation for enucleation. The crystalline lens was lying on her left cheek and, besides, much vitreous had escaped and a portion of the iris was prolapsed. The attending surgeon to the hospital, Dr. Van Schaick, was making his daily visit to the institution. He examined her eye, and decided to cut off all the vitreous and iris that was presenting at the wound. This was done and a bandage was applied afterwards. As Dr. Gilfillan was out of town at the time, he did not see the case until the following day. On examination he found that the opening in the cornea was in the centre and seemed only large enough to allow the lens to pass through. It was horizontal and the edges were rough. There was much blood in the anterior chamber. The size of the eye was not diminished. The wound healed up slowly, it taking six weeks for the cornea to heal completely. This case is strange in the fact that there was no traumatism nor was there any ulcerative process going on in the cornea. There was no staphyloma. Had there been any of these conditions, there would be nothing unusual about the case. The patient had well-marked arteriosclerosis, as might be expected in a person of her age. It is possible, perhaps, that straining at stool may have ruptured one of the vessels of the eye and produced the unusually large hemorrhage. He has been unable to find any literature on the subject, or to find any colleague that had heard of such a case.

Dr. GRUENING stated that the strange feature of the case was that the rupture should have taken place through the cornea. He had never observed one.

Dr. ARNOLD KNAPP presented **a specimen of tuberculosis of the retina, with a short history of the case.** The patient was

a negro child, two years old, in apparently good health. The eye was enucleated on account of symptoms suspicious of glioma. On opening the eyeball a circumscribed tumor was seen to occupy the apex of the totally detached retina and to extend slightly into the optic nerve and choroid on one side. Microscopically the growth proved to be a conglomerate tubercle. A full description of this case will appear in the ARCHIVES OF OPHTHALMOLOGY.

Dr. H. KNAPP stated that he had enucleated the eyeball. On ophthalmoscopic examination he had obtained a dull reddish reflex from the fundus, and, the patient being a child, he suspected it was a glioma. He considered the case very rare.

Dr. WEEKS inquired if tubercle bacilli had been found, or any signs of degeneration, or any symptoms in any other part of the child. Dr. A. KNAPP stated that he had found a few tubercle bacilli, and that the child had recently developed an abscess of the cheek and synovitis of the left elbow. Dr. Weeks considered the case very rare.

Dr. H. H. TYSON read **a report of a case of embolism of the arteria centralis retinæ, with the exception of a small branch supplying the macula.** He gave the following history: B. C., male, age thirty-eight years, occupation tailor, attended the clinic of the New York Ophthalmic and Aural Institute on the afternoon of November 8th last, and stated that he could not see with his right eye, and that he had lost the sight of it three days previous, about noontime, shortly after eating his lunch. He had no prodromal symptoms. Upon examination the right pupil was larger than the left, and reacted sluggishly to light and accommodation. When the right pupil was illuminated, the left one reacted promptly and strongly; when the left one was illuminated, the right reacted slowly and partially. R V counted fingers at two feet. Field contracted to fixation point in all directions excepting inferiorly to within 5° and temporally about 10°. Ophthalmoscopic examination revealed the typical picture of obstruction of the arteria centralis retinæ with the exception of a small branch supplying the macula. A dark cherry-red spot with the opalescent retina was present, but there was a portion of transparent retina situated between the disk and the macula, with a width of about $\frac{2}{3}$ disk diameter, through which a small blood-vessel could be seen running from near the centre of the disk to the macula. The artery appeared to emerge from the disk at about $\frac{1}{3}$ disk diameter from the trunk of the central artery. All the

other vessels were somewhat contracted and indistinct. No history of syphilis, rheumatism, heart or kidney disease, or arterial sclerosis could be obtained, but patient was somewhat anæmic. One week later, vision had improved to $\frac{18}{200}$ and the field had extended to 10° inferiorly and 15° temporally; November 22d, vision $\frac{20}{100}$, field same as last week, retina becoming more transparent, disk pale. December 13th, vision $\frac{20}{100}$. Field same as in last test. Optic-nerve head white. Veins somewhat enlarged, arteries contracted. One punctate hemorrhage, size of a small pinhead, was situated about one disk's diameter above macula. Right pupil continues larger than the left but was more responsive to tests than formerly. Treatment comprised rest, iron, pilocarpine, and massage of globe.

Dr. H. KNAPP said that integrity of the macular branches in embolism of the central retinal artery was not so rare, but his attention for many years had been directed to the observation of isolated embolism of the macular arteries. In going over his collection of ophthalmoscopic sketches, he had found one marked and one somewhat ill-defined example of this condition. A good picture and description were also to be found in the second edition of *Graefe-Sämisch's Handbuch*, 26th and 27th Lieferung (fascicle), p. 34, according to a case reported by Dr. Seydel.

Dr. N. L. WILSON presented a case of Mules' operation, with a history of the case, as follows: Mr. M., age forty-one years, blacksmith, was injured June 15, 1900, by a piece of steel, 13 x 15 *mm*, entering the eyeball, tearing a jagged wound through the cornea, extending into the sclera transversely. When he saw him a few hours after the injury the lens and a large amount of vitreous had escaped. The steel was removed with the Johnson magnet. He had hoped to get a sunken eyeball, but on June 20th there was evidence of infection and he performed Mules' operation. There was considerable reaction following the operation, but this rapidly subsided under cold applications. After eighteen months the enophthalmos was much less marked. The mobility was increased, there was less secretion, and the general satisfaction and happiness of the patient were reasons why he thought it should be done more frequently than is now employed.

Dr. CHAMBERS stated that he considered Dr. Wilson's result good. In one case he put in a globe which was too large; he removed it and inserted a smaller one which had remained without causing any trouble during the past two years. Some writers

state that they have seen globes retained for at least fourteen years.

Dr. WEEKS stated that in cases in which he found reaction quite severe after Mules' operation he used pressure to reduce the swelling and not cold applications.

Dr. WM. M. LESZYNSKY presented a man thirty-five years of age with **bilateral optic atrophy and left oculomotor paralysis.** The patient had degenerative cerebro-spinal syphilis. As a result of traumatism to the skull, the optic atrophy was hastened in its progress towards complete blindness.

Dr. E. GRUENING presented a young girl who had had the **lens in her right eye discinded for the relief of a high degree of myopia.** He stated that previous to the operation she had in her right eye myopia 28 D. He performed two needle operations upon her eye and obtained a correction equal to 22 D, leaving at the present time a myopia of 4 or 5 D, with a clear black pupil. He thought that extraction was not necessary in young individuals, and that very good results may be obtained by discission.

Dr. BATES referred to a patient he had operated upon who had myopia 20 D before the operation and a hyperopia 4 D afterwards. The other eye remained the same.

Dr. EDWARD FRIDENBERG reported a **case of excessive myopia treated by two discissions and a lateral keratotomy with evacuation of lens matter.**

The patient had a myopia of 24 dioptries in the right eye (20 D in the left eye), which had been operated on. With correcting glass he saw $\frac{20}{100}$, but was unable to tolerate correction, and unable to work at his trade of bookbinder.

Operations were done last spring. He has now 2 D myopia, and with glass reads $\frac{20}{40}$, without glass J. 2 fluently, and is able to work.

The pupil is absolutely round and movable. Fundus shows moderate degree of sclero-choroiditis posterior.

Dr. WEEKS stated that patients with a good fundus were favorable cases for operation. He had operated upon an eye with myopia 33 D, vision $\frac{1}{200}$, increased to $\frac{20}{100}+$ afterward. He also operated upon the other eye of the same patient with myopia 28 D. He obtained a fair result at first, but later detachment of the retina and cyclitis followed. He operated with iridectomy and extraction.

Dr. SCHAPRINGER presented a **case of staphyloma of the**

sclera for Dr. KOLLER. It was produced by traumatism some years ago. The lens was dislocated upward. Patient had had a corneal bleb which had burst, leaving a corneal ulceration.

Dr. BATES presented a **case of optic-nerve atrophy.**

Dr. WEEKS presented a **case of operation for establishment of a cul-de-sac for wearing an artificial eye.** He had used the Wolff flap with a transplantation of skin flap from the arm.

Dr. M. L. FOSTER read a **report of a case of chancroid of the eyelid, with references to literature on the subject.** He stated that venereal ulcers of the eyelid were by no means common, but the non-syphilitic sore was met with so very rarely that he had been unable to find a single case reported in which chancroid of the eyelid was even the probable diagnosis after an extensive examination of medical literature. Therefore he thought the following case possessed sufficient interest to be worthy of record :

A man thirty-six years of age came under his observation in the service of Drs. Pomeroy and Hepburn at the Manhattan Eye and Ear Hospital, March 29, 1901. About a month before he had contracted a sore on his penis, followed by suppurating buboes in the groin which up to that time had not healed. Ten days before he saw him a sore appeared on the edge of his right upper lid which had slowly grown worse. There was no history of traumatism and the general condition of the patient was by no means enfeebled.

When first examined the entire lid was red, swollen, and drooping over the eyeball. In the middle of the intermarginal space was an ulcer 6 or 7 *mm* long by 2 *mm* wide, its floor excavated, with a purulent detritus, its edges abrupt and elevated but not indurated. The preauricular and cervical glands were not enlarged, and there were no symptoms of syphilis present. Frequent cleansing of the eye with a solution of corrosive sublimate, 1:5000, produced immediate improvement, and the ulcer was healed on April 10th. The patient was kept under observation and no symptoms of syphilis had appeared on May 28th, three months after the supposed date of his exposure and two months after coming under observation.

A positive diagnosis in such a case as this is by no means easy. A sore on a reddened, swollen lid may be an irritated epithelioma, a tuberculous ulcer, a simple septic ulcer, a chancre, a gumma, a chancroid, or an ordinary hordeolum or stye. The history, the

general condition of the patient, and the microscope may be relied upon for the recognition of the first two conditions; the history and the presence of other manifestations of syphilis may lead to the detection of a gumma, and the diagnosis of a chancre will be determined by the appearance in due time of the secondary symptoms; but he knew of no way in which a positive diagnosis could be made between a chancroid and a simple septic ulcer of the lid. In the case here reported the diagnosis was narrowed by exclusion to one of the two last-mentioned conditions; in favor of the idea that the sore was a chancroid was its general appearance, the excavated base covered with detritus, and the abruptly elevated but not indurated edge, together with the opportunities for and probability of an auto-infection from the suppurating buboes or the chancroid itself; in opposition to the idea was the exceeding rarity of the lesion, the fact that the ulcer was elliptical instead of round, and the absence of swelling and suppuration of the neighboring lymphatic glands. Of these three points in opposition the last one alone is of much weight, and the preponderance of evidence seems to him to be distinctly in favor of the diagnosis of chancroid.

The venereal sore of the eyelids most frequently met with is the hard chancre, the initial lesion of syphilis. Dr. L. D. Bulkley refers in his book, *Syphilis in the Innocent*, to 107 authors from whose writings he has collected 372 cases of this nature, and he has added five more which have come under his personal observation. Dr. Foster adds to this number from his own reading eight authors and fifteen cases and, although he cannot quote a single case similar to that which forms the subject of this paper, it may not be amiss to call attention to a few of these cases which portray the difficulties attendant upon the diagnosis of these conditions.

Blickhahm.—*Amer. Jour. of Ophth.*, July–August, 1891.

Snell, Jessop.—*Trans. of the Ophth. Soc. of the United King.*, 1895.

Velhagen.—*Klinische Monatsbl.*, Feb., 1896.

Gagcow.—*Deutsche med. Wochenschr.*, Feb. 10, 1895.

Gruder.—*Wiener med. Wochenschr.*, Feb. 8, 1898.

Helborm.—*Münch. med. Wochenschr.*, May 24, 1898.

Mohr.—*Ung. med. Presse*, Feb. 9, 1899.

Norris.—*N. Y. Med. Jour.*, Dec. 23, 1899.

In many cases it is impossible to differentiate a chancre of the lid from a stye until after the appearance of the secondary symp-

toms, as is well shown by the histories of the cases reported by Mohr, Blickhahm, and others. Blickhahm's case is peculiarly interesting, because the lesion was mistaken first for a stye and then for a chancroid. The patient was a man who had had several sores on his penis at various times and was under treatment for a phagedenic chancroid which had nearly destroyed the glans, but was not accompanied by suppurating buboes at the time he came under observation. He had what appeared to be a stye on his right upper lid, which, after a week of treatment, was opened. This operation aggravated the trouble, the tissues began to slough, and a sore was formed which was diagnosticated a chancroid. The preauricular and cervical glands became enlarged, but did not suppurate. Finally a cutaneous syphilide demonstrated the true character of the sore on the lid to have been that of a primary syphilitic chancre.

Ring (*Medical Record*, Nov. 5, 1892) reported a case in which the history leaves a doubt whether the lesion was a primary chancre, as claimed, or a broken-down gumma.

The patient stated that the ulcer was of three or four months' duration, would gather and break occasionally, and was painful. During a subsequent visit she admitted that her cervical glands had been swollen before, and a week later she was found to have mucous patches in her mouth.

The beneficial effect of the treatment, inunctions of oleate of mercury together with increasing doses of potassic iodide, is of no value from a diagnostic point of view on account of its shotgun nature; if the lesion was a chancre the inunctions were indicated and the potassic iodide might well have been omitted; and if it was a gumma the benefit was obtained from the potassic iodide, and the utility of the mercurial inunctions was at least questionable. Consideration of the history alone would incline one to think the lesion a gumma, but the statement of the writer, an experienced observer, that it was a chancre must be held sufficient, because it is not easy to place on paper a balance of symptomatic evidence upon which a surgeon must clinically rely for his diagnosis in obscure cases. In 1899, Dr. Norris related an interesting case to the Section in Ophthalmology of the College of Physicians of Philadelphia. A synopsis of the case, not by Dr. Norris, is the only account available by him, a fact which he regrets because it was reported as a chancre of the lid, while the description here transcribed leaves the diagnosis seriously in

doubt. "Dr. W. F. Norris related the case of a man, forty-five years old, who had presented himself at the dispensary of the hospital of the University of Pennsylvania and stated that the disease had started two days before as a little white blister, about a quarter of an inch from the external canthus of the right eye. There was marked swelling of the lids, with an indurated lump in the margin of the lower lid, near the external canthus, about a third of an inch in diameter and yellowish. The bulbar conjunctiva was highly chemosed, and there was a slight conjunctival secretion. The patient had severe nocturnal pain in the forehead and temples. There were no posterior synechiæ or other evidences of inflammation of the iris. He was ordered a solution of atropine and 10 grains of potassium iodide, the dose to be increased two grains daily. Four days later the face, the lids, and the glands of the neck were much indurated and swollen; the yellow lump in the lower lid had broken down, leaving an irregular open sore and ectropion of the lower lid. The severe symptoms gradually subsided, and seven days later there was no pain and the swelling of the lids and the chemosis had decreased. The upper margin of the cornea was the seat of several small superficial ulcers. Holocain was applied to the ulcers, and the sore on the lid was touched with 5 % solution of protargol, later with mercuric bichloride 1 to 500. Five days later there was an indurated sore with a sharp-cut excavation. The patient had progressed steadily, and at the time of the meeting, three weeks later, the inflammation had subsided, the ulcer was nearly filled, and there were three minute elevations on the margin of the lid just beyond the outer edge of the ulcer. There was no history of infection to be obtained, no lesion or scar on the penis, and there were no symptoms of secondary or tertiary syphilis. The patient attributed the lesion to traumatism, and said that some days before the symptoms appeared the lid was penetrated by a splinter of glass that was removed by a fellow-workman." Unfortunately this case was reported at too early a date for a positive diagnosis to have been made. The patient had been under observation only a month, and there is no reason to suppose that the infection was many days antecedent to the date on which he appeared at the dispensary, therefore sufficient time had not elapsed for the appearance of the secondary symptoms which alone could determine the character of the lesion to be that of a chancre, the primary lesion of syphilis. If it was not a chancre it may have

been a chancroid, but the absence of the history or probability of direct infection renders it extremely difficult, if not impossible, to differentiate between a simple septic ulcer, a chancroid, and a chancre prior to the appearance of the secondary eruption.

Dr. WEEKS stated that an absence of involvement of the general lymphatics was a rare occurrence. He would expect to find an enlargement of the preauricular and submaxillary glands in cases of chancroid of the lids.

REPORT OF THE MEETING OF THE OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM, NOVEMBER 8, 1901.

By Mr. C. DEVEREUX MARSHALL.

DAVID LITTLE, M.D., F.R.C.S.E., PRESIDENT, IN THE CHAIR.

Chronic serpiginous ulcer of the cornea (Mooren's ulcer).

Mr. NETTLESHIP read this paper. The terms "chronic serpiginous ulcer" or "Mooren's ulcer" are preferable to "ulcus rodens," which is another name for rodent epithelioma. The paper is based upon an examination of 71 cases, 12 of which are the author's.

Bowman was the first to describe a case in detail (1849), but Mooren rightly has the credit of discovering the disease as a clinically distinct species in 1867. The ordinary characters and course of the disease are described. Its usual duration is from four to twelve months, and no cases are included that lasted less than two months, though certain cases running a less chronic course may perhaps be of the same nature. The subjects are adults from twenty-three to seventy-one; rather less than a quarter were under forty, just half between forty and sixty, rather more than a quarter over sixty. A decided majority are males. In a large majority the attack in both sexes begins in the winter half of the year; and degenerative changes, perhaps merely senile, lowered surface temperature, and perhaps some congenital defect of quality of the corneal tissue in certain persons, are suggested as predisposing causes.

The course of the disease strongly suggests infection, but no

special micro-organism has as yet been found. In more than one-fourth of the cases both eyes suffer, sometimes with an interval of years, and the disease is often exactly symmetrical in the two eyes.

The prognosis is always grave, and is far worse when both eyes are attacked, only one in four of the double cases being arrested short of total leucoma, whilst of the single cases more than half recover with some untouched cornea. The deeper parts of the eye remain healthy, and vision is determined by the final state of the cornea and pupil. Treatment should begin with cutting away the overhanging and half-dead edge of the ulcer and applying an escharotic or strong germicide to the advancing border thus exposed; the galvano-cautery is the best, pure carbolic acid and strong tincture of iodine probably come next; transplantation of conjunctiva over the ulcer appears useful occasionally. Though some cases are published as cured which would probably relapse, and though others go to universal leucoma in spite of all possible treatment, the results have been much better since the introduction of the cautery than before.

Several old patients have done well, and several young ones very badly. Allusion is made to the "marginal atrophy" of the cornea recently described by Fuchs, and to several other allied conditions of the cornea.

Mr. TREACHER COLLINS asked if there was any relation between the age of the patient and the rate of progress of the disease. In two cases he had seen, the ulceration of the cornea was most extensive, and yet the remaining opacity was not dense and remarkably good vision remained. In one case the patient developed a crop of vesicles on the cornea and some patches of infiltration, all of which cleared up upon his doing paracentesis and iridectomy.

Mr. LAWFORD related the case of a woman, aged sixty-nine, with no very definite specific history. In the right eye more than half the cornea was attacked, there was severe iritis but not much pain, and temperature normal. He cauterized the advancing edge, and after a second application it healed. Shortly afterwards it broke out again, and he then applied nitric acid without much good resulting. He then used liquor iodi daily, but it caused pain and did not do much good. Then the left eye became congested. An ulcer developed, which he burnt with the cautery. The right eye had no unattacked cornea and it was vascular and

cicatricial. The left was again cauterized and strong perchloride and glycerine applied. After freely cutting away the edge and applying the galvano-cautery it healed, but again broke down and was cauterized. This was repeated, and the patient still remained under treatment.

In another case, that of a man aged forty-six, healing was obtained after one application of the galvano-cautery.

Mr. LANG, on one occasion after failure with the cautery, did an iridectomy, when the ulcer healed and the case did well. Since then he has treated others in the same way with good results in all but one case.

Mr. BRONNER thought that there were two distinct classes of cases, one in which the ulceration was superficial and one in which it was deep.

Mr. SYDNEY STEPHENSON had published a case which occurred in a lady aged sixty, where the ulcer healed after two applications of the cautery. He then looked upon it as malignant, but this view he does not now hold. The disease seems to occur about once in 17,000 cases, though more appear to occur in some places than in others. He thought the name Mooren's ulcer was a better term than serpiginous. Gifford had published a case in which the conjunctiva and sclera were involved in the ulcerative process, and last year an Italian observer isolated a bacillus which caused the disease when inoculated into the conjunctiva of rabbits.

The PRESIDENT stated that he had seen only a few cases, and he described one which occurred in a lady, in which he advised an iridectomy, as it had, when he first saw it, resisted all kinds of treatment. The patient refused to have the operation done. He subsequently transplanted a corneal flap with good result. The disease followed influenza.

Mr. BICKERTON asked if there was evidence of dacryocystitis in Mr. Nettleship's cases.

Mr. Nettleship replied that lachrimal-sac trouble was very uncommon in these cases. With regard to age and prognosis he had not worked it out, but he did not think that there was anything striking in this respect. He had never noticed vesicles on the cornea, neither had he found that the inhabitants of some countries were more liable to the disease than others. The cases cited by Mr. Lawford and the President certainly made the prognosis look bad, but he was sure that it was much better since the introduction of the cautery.

Three cases of **keratitis in the new-born, occurring after instrumental delivery**, and resulting in each case in an almost identical rare form of opacity.

This paper was read by Dr. W. Ernest Thomson (Glasgow). All the mothers had contracted pelves, and in one, with a conjugate of only $2\frac{3}{4}$ inches, the delivery had been extremely difficult. Dr. Thomson saw two of these children very soon after birth, at which time three corneæ out of the four presented opacities in the anterior corneal layers, with dulling of the surface, but no vascularity. There was in all some bruising of the lids and conjunctivæ. The subsequent result was peculiar, for while one cornea became progressively more infiltrated, and that uniformly, the other two quickly improved; but the opacities, instead of remaining as central nebulæ, developed into a white central, vertical, linear scar with an adjacent area of much fainter haze. The third case had come under the care of Dr. Andrew Wilson, at the fifth week. All signs of active keratitis had passed away, but an obliquely placed linear scar remained, precisely similar in character to those in the other children. Dr. Wilson suggested that the cornea became buckled by the pressure of the forceps squeezing the eye against the nasal wall of the orbit. Dr. Thomson pointed out that such cases, if seen late, might be diagnosed as congenital corneal opacity of intrauterine origin.

December 12, 1901.

Clinical Evening.

Mr. H. Work Dodd showed a peculiar **new growth of the orbit.** The patient was a woman aged thirty-nine, who was seen in October, 1901, with the history that eleven years ago she had a small growth of the upper lid, which in four years had attained the size of a pea. This was then removed. Two years later a lump appeared, and this broke down and healed several times and had attained the size of a filbert, being situated at the outer side of the orbit. It was adherent to the bone. The eye was pushed to the nasal side and there was an enlarged gland in front of the ear. The whole contents of the orbit was removed and the bone to which it was adherent was scraped. The lacrimal gland was normal. The pathologist's report stated that it was an unusual form of carcinoma allied to rodent ulcer. As much difference of opinion was expressed on the sections the growth was referred to a pathological committee.

Mr. HENRY JULER showed the following cases :

(1) **A congenital case of retinal pigmentation situated towards the periphery of the fundus.**

(2) **Peculiar macular changes due to choroido-retinitis.**

(3) **A case of congenital aniridia.** In this case the mother and daughter were affected. The mother came to Mr. Juler stating that the sight had always been defective, and when seen one eye was quite blind from glaucoma. After removal it was found on dissection that there was a ring of iris at the extreme periphery, which had caused blocking of the angle. The lens was partially opaque.

The daughter had come under the care of Mr. R. D. Batten, also suffering from glaucoma, and for this he had been induced to do sclerotomy, but it was not successful. He thought it was contrary to what one would expect—that an eye without an iris should have glaucoma.

Mr. DEVEREUX MARSHALL stated that he had seen several cases of this sort and he never remembered seeing one who did not have glaucoma. This was due to the fact that the stump of iris which was always found present was sufficient to block the angle, and this narrow ring was quite sufficient to produce the disease.

Mr. TREACHER COLLINS had examined several cases and had shown that they were specially liable to chronic glaucoma.

Mr. TREACHER COLLINS showed a child with **congenital thickenings of the conjunctiva, opacities of the cornea, and a notch in the left lower lid in the vicinity of the outer canthus.**

Mr. G. BROOKSBANK JAMES showed three cases of **infantile tabes due to congenital syphilis.** They were all members of the same family and showed Argyll-Robertson pupils and other symptoms of tabes. There was, however, no atrophy of the discs and the fields were normal. He also showed a case of occlusion of the four lacrimal puncta, probably congenital. There was epiphora with dacryo-cystitis, and for this he had opened one of the occluded lower puncta.

Mr. J. B. LAWFORD showed an unusual case of **choroido-retinitis in a subject of hereditary syphilis.**

Mr. G. W. ROLL showed a case of **localized fundus changes probably of traumatic origin.** The eye was injured in May last by being struck with a piece of iron. Two months later

definite fundus changes were present. A foreign body was localized in or just in front of the sclerotic. There was seen to be a patch of atrophy close above the macula, with pigmentary changes around it. He thought the foreign body, which was 3 mm. long, had entered through the cornea, iris, and suspensory ligament, as the lens was clear.

Mr. ORMOND mentioned a similar case he had had in which after ten days no wound was visible, although it was easily seen immediately after the injury.

Mr. DOYNE said there was a black mark at the back of the lens which possibly was a scar.

Mr. LANG mentioned a similar case he had watched for two years without deterioration of vision, and in the present case, as everything was quiet, he should be inclined to leave it alone.

Mr. J. H. FISHER showed a case of **Mooren's ulcer of the cornea.**

Mr. L. V. CARGILL.—This patient shown by Mr. Cargill was a girl, aged twenty-two, whose sight had been gradually failing for about a year. The family history was good. Two years ago she suffered much from headache, and when first seen she was very anæmic, but an examination of the blood and urine showed nothing abnormal. The vision was $\frac{6}{60}$ and J14. The changes consist of numerous greyish yellow spots in the choroid. There are no vitreous opacities and the vessels of the fundus show nothing but perhaps slight dilatation.

Mr. H. BISHOP HARMAN showed a patient with a badly developed eye with **ciliary processes adherent to the anterior surface of a shrunken cataractous lens.** This was congenital.

Mr. FISHER said that about three years ago he had seen an almost identical case.

Mr. HARMAN also showed a simple and efficient **portable refractometer.**

SYSTEMATIC REPORT ON THE PROGRESS OF OPHTHALMOLOGY IN THE FIRST QUARTER OF THE YEAR 1901.

(*Concluded.*)

By Prof. ST. BERNHEIMER, at Innsbruck; Dr. O. BRECHT, Prof. R. GREEFF, Prof. C. HORSTMANN, and Dr. R. SCHWEIGGER, in Berlin;

with the assistance of

Dr. G. Abelsdorff, Berlin; Prof. E. Berger, Paris; Dr. Dalén, Stockholm; Dr. J. Herrnheiser, Prague; Prof. Hirschmann, Charcow; Dr. J. Jitta, Amsterdam; Dr. Krahnstöver, Rome; Mr. C. Devereux Marshall, London; Dr. P. von Mittelstädt, Metz; Prof. Da Gama Pinto, Lisbon; and others.

Translated by Dr. Ward A. Holden.

Sections VIII.–XII. Reviewed by Dr. R. SCHWEIGGER, Berlin.

XII.—CORNEA, SCLERA, ANTERIOR CHAMBER.

114. **Schapringer.** On congenital opacities of the cornea. *N. Y. med. Monatschr.*, xii., 11, p. 591.

115. **Silex.** On nitro-naphthalin opacity of the cornea. *Zeitschr. f. Augenheilk.*, v., 3, p. 178.

116. **Mendel.** On a case of diffuse keratitis from acquired syphilis. *Centralbl. f. prakt. Augenheilk.*, xxv., p. 10.

117. **Reuss.** Erosions of the cornea and their consequences. *Ibid.*, pp. 78 and 103.

118. **Fuchs.** On keratoplasty. *Zeitschr. f. Augenheilk.*, v., 1, p. 1.

119. **Meller.** The histology of cicatrices after posterior sclerotomy. *Arch. f. Augenheilk.*, xliii., p. 1.

120. **Zirm.** Tuberculous ulcer of the sclera. *Centralbl. f. prakt. Augenheilk.*, xxv., p. 87.

121. **Peters.** On changes in the concentration of the aqueous in naphthalin cataract. *Heidelberg Ophth. Soc.*, 1900, p. 199.

122. **Cowgill, W. H.** Corneal ulcer following an advancement operation on the external rectus muscle. *Ophth. Record*, Jan., 1901.

123. **Weymann, M. F.** Contusions of the eye producing obliterating hyperæmia. *Annals of Ophth.*, Jan., 1901.

124. **Jardine, R.** Opacity of the cornea in the new-born. *Brit. Med. Jour.*, 1901, p. 401.

According to SILEX (115), it is not the crystals from nitro-naphthalin, but gases, that cause the grayish-green discoloration and the formation of fine superficial vesicles. With Silex's large loupe, large wavy lines were discovered in the middle layers of the cornea and circumcorneal injection. Vision became reduced to $\frac{1}{8}$ in some months and in three months was restored again. Silex made subconjunctival injections.

MENDEL'S (116) patient was treated for syphilis as a new-born infant and then acquired a chancre in his twenty-second year. Six years after the second infection a typical diffuse inflammation of the cornea with a salmon patch at the upper margin appeared in both eyes. The right eye was worse, vision being reduced to fingers at 5 feet. Later V = $\frac{1}{2}$ was obtained. Six years later the right eye became inflamed again with a specific episcleritis involving the cornea, which cleared up again. A great number of vessels could be seen deep in the cornea, so that this inflammation due to acquired syphilis had the characteristics of inflammation from hereditary syphilis.

REUSS (117) quite agrees with Szili's publication on disjunction of the corneal epithelium. He alludes to the similarity of the condition in filamentous keratitis. He found, however, that producing an abrasion of the cornea caused severe irritation. He advises rather the use of a salve and bandaging the eye, or, better, both eyes, for ten days.

FUCHS (118) performed a plastic operation on a cornea, opaque from parenchymatous inflammation, by transplanting a cornea from a freshly enucleated eye. It healed, and after a week became opaque, then cleared up, and finally, through the progression of the original trouble, became quite cloudy. A second trephining was done, which permitted the transplanted flap to be exam-

ined microscopically. The excised cornea retained its membrane of Bowman and that of Descemet, and in the anterior three-fourths of its thickness the normal elements of the cornea. It cannot be held that these parts arose from the growing in of the neighboring tissues, which were cicatricial, as pathologists have laid it down as a fundamental proposition in the theory of these plastic operations.

MELLER (119) confirmed by pathological examination the supposition that the scar in posterior sclerotomy does not long permit filtration, as clinically it seems to do for a few days only. The cicatrices examined by Meller were, however, from three to six years old, but notwithstanding increased tension the margins of the wounds were close together and so intimately adherent that only a narrow stripe of nuclei broke the regularity of the scleral fibres. Choroid and sclera exhibited many broad spaces filled with granulation tissue.

ZIRM (120) found in a child an ulcer with irregular margins and a dirty yellow base situated at the corneal margin and apparently penetrating the entire thickness of the sclera. Tubercle bacilli could not be found, but in view of two bone fistulæ in the foot, the ulcer was supposed to be tuberculous and was therefore treated with the galvano-cautery.

WEYMANN (123) describes four cases of contusion with hemorrhage completely filling the anterior chamber. Such cases are likely to be followed by acute glaucoma, for which the best treatment is paracentesis of the cornea. ALLING.

Sections XIII.–XVIII. Reviewed by Dr. O. BRECHT, Berlin.

XIII.—LENS.

125. **Pansier.** Subconjunctival extraction of cataract. *Ann. d'ocul.*, cxxv., p. 166.

126. **Holth.** May couching be indicated to-day? *Norsk. Mag. f. lager.*, April, 1901.

127. **Wassiljeff** and **Andogsky.** Experimental researches on the question of cataract reclination. *Klin. Monatsbl. f. Augenheilk.*, xxxix., p. 97.

128. **Kirchhof.** On lamellar cataract. *Inaug. Dissert.*, Bonn, 1901.

129. **Nikaljukin.** A case of development of cataract after diphtheria. *Wjest. Ophth.*, March–April, 1901.

130. **Knapp, P.** Recovery from injuries of the lens in some animals. *Arch. d'opht.*, xx., 12, p. 629.

131. **O'Connor, C. E.** Summary of cataract operations performed at the New York Eye and Ear Infirmary in the year ending Sept. 30, 1900. *N. Y. Eye and Ear Infirmary Reports*, Jan., 1901.

132. **Dennett.** Concerning the extraction of uncomplicated senile cataract. *Ibid.*

133. **Gifford.** The danger of the spontaneous cure of senile cataract. *Amer. Journ. of Ophth.*, Oct., 1900.

134. **Veasey.** Traumatic luxation of the crystalline lens; secondary glaucoma; extraction without loss of vitreous; recovery with normal vision. *Ophth. Record*, Jan., 1901.

135. **Posey.** Successful removal of cataracts in insane patients with recovery of mind and sight. *Journ. Amer. Med. Assoc.*, xxxv., No. 21.

HOLTH (126) believes that couching is indicated when the first eye has been lost from expulsive hemorrhage after extraction. Also, in certain incurably insane persons the operation may be done. Exceptionally, couching may be done because of a dense membranous cataract which cannot be discinded with Knapp's knife and extraction is inadvisable. [Extraction with the capsule is indicated in such cases.—ED.]

The author couched a cataract in a woman of sixty-five whose first eye had been lost from expulsive hemorrhage. The immediate effect was good and $V = \frac{6}{12}$ was obtained. Four days later an attack of glaucoma came on. Various medicinal and operative remedies were tried without success and an iridectomy was required finally, it being done as a last resort. The ultimate vision was $\frac{6}{18}$.

The radius of curvature of the cornea remained the same before and after the couching and during the glaucomatous attack.

DALÉN.

KIRCHHOF (128) under Peters's direction examined 80 rachitic children for lamellar cataract. Most of them were between the ages of one and two years, none over four and a half years. One eye was examined in each child under mydriasis. In no case was lamellar cataract found, and the author concludes that rachitis has no causal relation to the development of lamellar cataract. This is not convincing proof, since the second eye was in no case examined, and since 73 % of the children being less than two years old the lenticular changes might have developed later.

In a girl of eight NIKALJUKIN (129) saw the development of a soft cataract in each eye after a severe attack of diphtheria treated with antitoxin. No other etiological factors were found.

An operation was successful.

P. KNAPP's (130) experiments on injury of the lens in different animals show that the wound heals by the formation of a characteristic capsular cataract. The substance of the lens, which is very resistant to injury, mostly shows a breaking down of the cortex only beneath wounds of the anterior or posterior capsule, while the nucleus remains almost unaltered. In the frog, fish, and bird—less in the rabbit and the goat and in the human eye—the degenerated places are regenerated though a proliferation of the capsular epithelium. Wherever an empty space was formed in the substance of the lens after an injury, a collection of homogeneous myelin masses was found. Wounds of the posterior capsule healed through a proliferation of the cells at the margin of the epithelium, and in rabbits this took place only when the wound reached the equator. At times a lenticonus formed at the point of injury of the posterior capsule. v. MITTELSTÄDT.

O'CONNOR (131) presents a tabulated report of 182 cataract operations: simple extraction, 124; with iridectomy, 49; preliminary iridectomy, 6; linear, 1; discission, 2. Of post-operative complications, intraocular hemorrhage occurred once, panophthalmitis twice. Prolapse of iris took place seven times. Average ultimate vision—for simple extraction 0.54, —combined, 0.36. ALLING.

DENNETT (132) does not regard maturity as important for success. He favors the simple extraction and believes that when healed, the eye is tougher than after the combined extraction. Fixation forceps are unnecessary, but if used should be applied near the point of counterpuncture and removed when the section is finished. The point of the knife is the most important, the edge being the secondary consideration. ALLING.

GIFFORD (133) relates four cases in which cataracts had been partially absorbed through liquefaction of the cortex and displacement of the nucleus. Three of these cases were associated with glaucoma, which he is inclined to believe, in these cases, was secondary to the dislocation of the lens or nucleus.

ALLING.

XIV.—IRIS.

136. **Ladame-Jeoleff, Elizabeth.** A method of doing iridectomy when the anterior chamber is wanting. *Ann. d'ocul.*, cxxv., p. 19-48.

137. **Hocquard, E.** A study of synechias of the iris. (Conclusion.) *Arch. d'opht.*, xxi., 1, p. 23.

138. **Ray, J. M.,** and **Amos, A. R.** Two cases of vascular nævus of the iris. *Amer. Journ. of Ophth.*, Dec., 1900.

In a paper prepared under the direction of Dufour, LADAME-JEOLEFF (136) reports on the results obtained by Gayet's method of iridectomy. After giving a résumé of the history in respect to the technique of iridectomy from Cheselden to von Graefe, she describes Gayet's method and Dufour's modification of it. With a scarifier Gayet incises the sclero-corneal junction, making sawing movements of the knife. As soon as the chamber is opened, aqueous escapes. Gayet then enlarges the wound with scissors ; Dufour with two blunt-pointed bistouries. Gayet's method is indicated when the chamber is narrow or wanting, particularly in acute glaucoma, anterior synechiæ, corneal staphyloma, and chronic iritis. Unpleasant but unimportant accidents are hemorrhage into the anterior chamber and incision of the periphery of the iris. Schlemm's canal cannot be wounded since the incision lies wholly in front of it.

HOCQUARD (137) states that, in peripheric synechiæ of the iris with blocking of the chamber angle and increased tension, the adherent portion of the iris becomes atrophic, and the scleral tissue about Schlemm's canal is broken up and thinned, and new channels of exit are formed. In rare cases the tissues about the chamber angle and the attachment of the ciliary muscle become atrophic so that liquid may pass into the suprachoroidal space and be carried off along the venæ vorticosæ. In both cases tension is lowered.

The second section of the paper deals with posterior synechiæ, which even in mild inflammations form at the loose and vascular pupillary portion of the iris, and by shrinking of the exudation lead to entropium of the pupillary margin. v. MITTELSTÄDT.

RAY'S (138) patient, a woman of thirty-nine, when five years old had an attack of erysipelas, after which a peculiar dark spot made its appearance on the iris. Within the last five years this had begun to enlarge and for two years the sight had been blurred. The upper-inner portion of the iris angle was filled with a brownish mass about the size of a coffee bean. It pressed against the posterior surface of the cornea and extended downward to the pupillary edge, which it overhung. Where not in contact with the cornea, the surface appeared roughened like a berry. V = 20/LXX. No visible extension to deeper parts of the eye

was detected. The histological examination by Adolf Alt showed that the tumor originated in the anterior part of the ciliary body. The posterior surface of the tumor involved the anterior parts of the iris, but left the posterior third, as well as the pigment layer, more or less intact. The parts of the tumor which were adherent to the iris tissue, to the ciliary body, and to the cornea are darkly pigmented. The tissue of the growth itself is, in the main, made up of spindle cells arranged in strands. A peculiar characteristic, however, is the presence of larger and smaller cavities, which are enclosed between the spindle cells. A great many of these have an unbroken endothelial lining and are probably capillaries. The second case, of Amos, was a boy of eleven years. An ovoid dark-colored mass filled the greater part of the nasal half of the anterior chamber and had been first observed when he was two or three years old. It appeared to start from the root of the iris, and on section seemed much like the other, but was darkly pigmented throughout. The tumor consisted of spindle cells and showed the same cavities lined with endothelial cells. While the tissues of the eye in the first case showed no cell infiltration, even in the parts lying close to the tumor, there was, in the second case, a small amount of cell infiltration in the iris and ciliary body, but not a zone of infiltration and inflammation characteristic of malignant new-formations. Alt considered the first a capillary nævus and the second a cavernous or venous angioma. Alling.

XV.—CHOROID.

139. **Coppez.** Interfascicular endothelioma of the choroid. *Arch. d'opht.*, xxi., 1., p. 1.

140. **Lagrange.** Lymphangio-sarcoma of the choroid. *Bull. de la soc. d'opht. de Paris*, Feb. 7, 1901.

141. **Bentzon.** Adeno-carcinoma of the choroid. *Hospitalstidende*, Jan. 23, 1901.

142. **Gruening.** A case of tuberculous choroiditis in conjunction with tuberculous meningitis. *N. Y. Eye and Ear Infirmary Reports*, Jan., 1901.

143. **Posey** and **Shumway.** Alveolar sarcoma of the choroid. *Annals of Ophth.*, Jan., 1901.

Beginning with an observation of his own, Coppez (139) seeks to determine the characteristic features of interfascicular endothelioma as regards structure, origin, growth, and degenerations. The true interfascicular endothelioma arises from the endothelial cells which cover the tracts of connective tissue or line the lymph

spaces. It is therefore interfascicular and has no relation to the vessels, thus differing from the peritheliomas and angio-sarcomas. All these neoplasms, however, like the tumors arising from the stroma cells, are genetically to be grouped with the sarcomas. In the course of development, the pure picture of endothelioma is lost through the development of neighboring tissue cells, so that the structure partially corresponds to a perithelioma or a true sarcoma.

Since the development may begin at different places and with different sorts of cells, classification is difficult. The arrangement of the cells, sometimes in concentric rings, sometimes in tracts and tubules, and their hyaline or colloid degeneration, with the formation of small cysts which communicate with blood- or lymph-vessels, lead in many cases to the incorrect designations: epithelioma, glandular carcinoma, adenoma, lymphangioma, and alveolar sarcoma. v. MITTELSTÄDT.

LAGRANGE (140) describes a case of lymphangio-sarcoma of the uveal tract which, in his opinion, took its origin in the loose cellular tissue pervading the suprachoroidal lymph spaces.

BERGER.

BENTZON'S (141) patient was a man of thirty, in whose macular region in one eye slight changes (central choroiditis) were noticed in March, 1878. Two months later the patient's eye became painful, and exhibited a detachment of the retina. The patient died in September of the same year, and the suprarenal capsule of the right side was found to have undergone a cancerous degeneration, probably primary. Metastases were found in the mediastinal lymph glands, in both lungs, and in the right eye where there was an adeno-carcinoma of the choroid and ciliary body. DALÉN.

GRUENING (142) would conclude from clinical experience that tuberculous choroiditis complicating tuberculous meningitis was of rare occurrence, but may be more common were the results of anatomical examinations known. He reports a case of tuberculous meningitis, in which he found in the left eye two pale spots, about 1/3 diameter of the disc, shading gradually into normal choroid. A small gray tumor of the choroid (1.75 *mm* x 0.7 *mm*) was found near the disc and lying in a depression in the sclera, the retina not being adherent to it. The tumor consisted of groups of cells which varied in size and formed distinct nodules. The blood-vessels of the choroid were either infiltrated or oblite-

rated. Tubercle bacilli were found in the tumor. In the eye œdema of the optic nerve and retina was present. The ganglion cells of the latter had almost entirely disappeared. ALLING.

In the case of POSEY and SHUMWAY (143), a thin flat tumor occupied the posterior external quadrant of the globe. The patient was a woman of seventy years. The larger part of the mass was composed of cells which were distinctly endothelial in type, large, round, and polyhedral, with considerable protoplasm and central nucleus. These cells were separated into distinct alveoli by stroma composed of pigment cells. Many of the cells were swollen and degenerated, presenting vacuoles. The choroid, even at a distance from the tumor, showed proliferation of the endothelial cells of the blood-vessels in the outer layers. The sheaths of the nerve fibres of the optic nerve were converted into innumerable droplets. The tumor developed from the endothelial cells of the choroidal vessels. ALLING.

XVI.—VITREOUS.

144. **Fehr.** On recurrent juvenile hemorrhages in the vitreous and retina. *Centralbl. f. pract. Augenheilk.*, Jan., 1901.

145. **Terson.** On hemorrhage into the vitreous in the course of cerebral apoplexy. *Ophth. Klinik*, 1901, p. 1.

146. **Bane, W. E.** Vitreous membrane with vessels. *Ophth. Record*, 1901, p. 44.

FEHR (144) reports eight cases of recurrent hemorrhage into the vitreous in young patients. Two eyes were examined pathologically. Almost all the retinal vessels had thick hyaline degenerated walls, and the veins appeared to be the more affected, often presenting evident periphlebitis.

Clinically this condition was found in all cases, besides other inflammatory changes in the fundus. The course was tedious, and there were frequent relapses. In two the final outcome was good, in three fairly good, in two bad, glaucoma necessitating enucleation. Treatment seemed to be of little avail, the best results being obtained from rest in bed.

The general condition of the patients gave no indications that would suggest the probability of hemorrhage, and the local vascular disease must be regarded as the expression of a constitutional affection which the author believes to be most probably hereditary syphilis.

XVII.—GLAUCOMA.

147. **Dor.** Bilateral glaucoma treated by means of iridectomy on the right side and sympathectomy on the left. *Bull. de la soc. de méd. de Lyon*, Jan. 21, 1901.

148. **Abadie.** The indications for the removal of the superior cervical ganglion in glaucoma. *Clin. Ophthal.*, xxx., 3, p. 129.

149. **Snell.** Acute glaucoma induced by cocaine. *Ophth. Review*, Feb., 1901.

150. **Oliver.** Case of blindness from sympathetic ophthalmia complicated with secondary glaucoma. Restoration of vision by two iridectomies, one with extraction of lens. An irido-cystotomy and Tyrrell's operation of drilling. *Phil. Med. Journ.*, Feb. 9, 1901.

151. **Risley.** A case of inflammatory glaucoma presenting unusual features. *Ophth. Record*, March, 1901.

151A. **Oliver.** Hemorrhagic glaucoma. *Journ. Amer. Med. Assoc.*, xxxv., No. 23.

Dor (147) reports a case of glaucoma in a man of sixty with $V = \frac{1}{100}$ in each eye and extreme nasal contraction of the field. Sympathectomy on the left side led to $V = \frac{1}{40}$, while iridectomy on the right eye improved the sight but slightly. The extent of the field also increased more in the left eye than in the right.

BERGER.

According to Abadie's (148) view, in simple chronic glaucoma there is a slight increase in tension due to dilatation of the vessels, which corresponds to the slow course of the disease. This dilatation of the vessels, he believes, is occasioned from the superior cervical ganglion of the sympathetic, and in case miotics do not hold the disease in check the ganglion is to be extirpated. In the inflammatory forms of glaucoma the intracranial portion of the sympathetic—the carotid plexus—is involved, in which run fibres for the innervation of the iris. Therefore there is constantly a dilatation of the pupil. In the acute forms iridectomy is indicated.

v. MITTELSTÄDT.

In this case recorded by Mr. Snell (149), the patient was a lady who had some discomfort in her right eye, and for this her doctor ordered cocaine drops 1 %. This was followed by all the symptoms of acute glaucoma, and when seen by Mr. Snell the tension was +2 and there was considerable pain. Eserine was used, but as this did not affect the condition, it was followed by iridectomy with a satisfactory result.

Oliver (150) has revived the operation done by Tyrrell sixty years ago. A straight needle is entered through the cornea, and

after penetrating the lens it is rotated between the finger and thumb, thus securing a free opening. The method is applicable to cases of capsulo-lenticular cataract complicated by adhesions of the iris. ALLING.

RISLEY (151) describes a case in which a patient, while being detained in the office for the treatment of acute glaucoma with repeated instillations of eserine, developed an attack of acute glaucoma in the other eye, which previously had been absolutely healthy. This attack quickly subsided with the use of eserine. Later an iridectomy on the eye first affected was followed by an attack of acute glaucoma in the other. Except for the previous experience it would have been considered that this was induced by the operation. ALLING.

XVIII.—SYMPATHETIC OPHTHALMIA.

152. **Zuhöhne.** Clinical reports on sympathetic ophthalmia. *Inaug. Dissert.*, Giessen, 1901.

ZUHÖHNE (152) describes 11 cases of sympathetic irritation and 11 cases of sympathetic inflammation seen in the course of 11 years at the Giessen clinic. The earliest onset was 5–6 weeks, the latest 28 years. Four patients obtained good vision, one poor vision, and six became blind. The therapy consisted in inunctions of mercury, diaphoretics, abstraction of blood, atropine, and warm fomentations.

Sections XIX.–XXII. Reviewed by PROF. GREEFF, Berlin.

XIX.—RETINA AND FUNCTIONAL DISTURBANCES.

153. **Fuchs.** The central black spot in myopia. *Zeitschr. f. Augen heilk.*, v., 3.

154. **Wüstefeld.** On retinitis punctata albescens. *Ibid.*, v., 2.

155. **Braunstein.** On detachment of the retina and its treatment. Char cow, 1901.

156. **Petersson, Alfred.** On glioma of the retina. *Upsala Läkare-förenings förhandlinger*, April, 1901.

157. **Gouin.** Ring scotoma in retinitis pigmentosa. *Ann. d'ocul.*, CXXV., p. 91.

158. **Alt.** A case of quinine amaurosis. *Amer. Journ. of Ophth.*, Jan., 1901.

159. **Moulton.** Quinine amaurosis; its frequency and remote manifestations. *Ibid.*, Feb., 1901.

160. **Stieren.** Amblyopia following the intoxicating use of Jamaica ginger. *Journ. Amer. Med. Assoc.*, Jan. 5, 1901.

161. **Harlan, H.** Blindness and death from drinking essence of Jamaica ginger, peppermint, etc., due to methyl alcohol. *Ophth. Record*, Feb., 1901.

Fuchs (153) calls attention to the fact that occasionally in myopia a sharply circumscribed round black spot is found in the macula. The affection begins with a sudden diminution of vision. Ophthalmoscopically, in fresh cases, a spot is found considerably smaller than the disc. Gradually it becomes as large as the disc or larger. Later the fundus becomes discolored about the spot from absorption of the pigment epithelium and appears a brighter red. Later the choroid becomes atrophic and its vessels lie bare or the area may become quite white.

When once formed the spot never disappears, and vision never becomes normal again. The general impression is that this affection results from hemorrhage (Förster). From the observation of 50 cases of this sort, Fuchs became convinced that while hemorrhages may occur they have no direct connection with the affection.

Lehmus, examining a spot of this sort, found the choroid not perceptibly altered, but the pigment epithelium so proliferated that it had two-thirds the thickness of the choroid. At the periphery, however, the pigment epithelium was paler or entirely without pigment.

The name retinitis punctata albescens was suggested by Mooren. Wüstefeld (154) describes a new case of this rare disease observed in Professor Mellinger's clinic at Basle. Many white points without a pigmented margin are found scattered over the fundus. The affection begins in early life and attacks frequently several members of a family, there being often consanguinity of parentage. Central vision is reduced, the field becomes contracted concentrically, and hemeralopia exists from childhood. Wüstefeld's patient was eight years of age, and in relation to her blond hair the fundus was darkly pigmented. Very fine white points were scattered about the posterior pole, while in the periphery there were larger white spots.

No pathological examinations have been made, but it is probable that the finest points lie directly above the choroidal vessels. The larger spots seem to extend forward to the nerve-fibre layer of the retina.

Braunstein (155) believes that neither the exudation theory nor the retraction theory of detachment of the retina will explain

every case. In many cases the influence of the vasomotors cannot be disregarded. He cites a number of cases in which the detachment came on in healthy, non-myopic eyes suddenly after a fright or other psychical disturbance.

Deutschmann's operation in the cases seen by the writer was not successful. The results are better after simple scleral puncture. Electrolysis was of advantage in but one case. The cases in which considerable improvement and a permanent cure were obtained were treated therapeutically only. HIRSCHMANN.

Wintersteiner recently advanced the theory that the tumor cells in glioma arise from the neuro-epithelial stratum of the retina.

PETERSSON (156) finds that there may be proliferation of Müller's fibres, and that cells having the ordinary stellate form of tumor cells may arise from them. Since in the inner nuclear layer stellate cells can arise from Müller's fibres, and since glia cells are present normally in the ganglion-cell and nerve-fibre layers, there is no reason why the tumor cells should not arise from glia elements in these layers. In fact, glioma usually appears here, and only four cases have been reported in which the tumor began in the outer nuclear layer. Thus the development of glioma can be explained without resorting to Wintersteiner's theory, and the old idea that highly differentiated cells have little tendency to form tumors need not be given up. DALÉN.

GOUIN (157), in a paper written under Dufour's direction on ring scotoma in retinitis pigmentosa, states that this form of defect of the visual field is characteristic of retinitis pigmentosa. The peripheric zone, which is still preserved, may escape the notice of a careless examiner. Furthermore, a ring scotoma by progression toward the periphery may pass over into concentric contraction. BERGER.

ALT'S (158) patient, a woman of twenty-seven, had been given forty grains of quinine in twenty-four hours. She experienced violent photopsia and gradual loss of vision. The quinine was continued for thirty-six hours longer. She was totally blind for three days, but her vision gradually improved. Two months later the vision was practically normal, but the fields were considerably reduced by atrophy of the optic nerves and retinal vessels. ALLING.

MOULTON (159) believes that quinine amblyopia may be more common than appears, since recovery with good central vision

may occur spontaneously. Two cases, which presented contracted fields, white discs, and small retinal vessels with practically normal vision, are related. The histories show undoubted blindness following large doses of quinine. ALLING.

STIEREN (160) reports a case of an alcoholic who consumed a dozen ounce bottles of Jamaica ginger in a few hours. Vision was reduced to movements of the hand. Treatment with pilocarpine and calomel brought about a cure in a few days. He regards the lesion as an acute retrobulbar neuritis. ALLING.

Two cases of poisoning, with blindness, from drinking essence of Jamaica ginger, peppermint, and lemon, are described by HARLAN (161). The patients showed atrophy of the optic nerve. The toxic principle was shown to be methyl alcohol with which the extracts were made up. ALLING.

XX.—OPTIC NERVE.

162. **Bielschowsky.** Myelitis and inflammation of the optic nerve. S. Karger, Berlin, 1901.

163. **Coppez.** Optic neuritis from ingestion of thyroidin. *Arch. d'opht.*, xx., 12, p. 656.

164. **Antonelli.** Papillary optic neuritis and pigmentary degeneration of both eyes following severe typhoid fever. *Bull. de la soc. d'opht. de Paris*, Jan. 8, 1901.

165. **Hansell.** A case of sudden blindness. *Amer. Journ. of Ophthal.*, March, 1901.

BIELSCHOWSKY (162) reports four cases of inflammation of the optic nerve with myelitis, examined microscopically in Mendel's clinic in Berlin. Optic-nerve changes are frequent in chronic diseases of the cord, but acute affections of the optic nerves, with acute diseases of the cord, are rare.

Since we have an accurate anatomical knowledge of the disseminated form of acute myelitis, we recognize the great similarity that exists between it and multiple sclerosis. Uhthoff has shown that inflammatory changes underlie the optic-nerve affections in multiple sclerosis. The frequent atrophic discoloration of a portion of the disc or of the entire disc is to be regarded as the result of a neuritis. In the sclerotic foci of the nerve one finds an atrophy of the fibres with a proliferation of the interstitial tissue, with increase in the nuclei, which is most evident in the sheaths of the vessels. We regard such inflammations as interstitial, believing that the interstitial tissue is diseased primarily. Tabic atrophy, on the contrary, represents a primary parenchy-

matous process without inflammation. At the present time, pathological examinations of the optic nerves in fresh cases of multiple sclerosis not having been made, we cannot say with certainty exactly what constituents of the nerve suffer first; yet, according to Bielschowsky, the indications are that the primary process is one of inflammation of the nerve fibres. The foci in the cord are parenchymatous changes of vascular origin.

Coppez (163) observed five cases of inflammation of the optic nerves after the excessive use of thyroidin tablets by persons who were trying to reduce their weight. The disturbance of vision began some months after the treatment was begun, and sight failed rapidly, while otherwise only slight symptoms of thyroid poisoning were evident. There was a central scotoma and slight inflammation of the disc. The vision improved as soon as the thyroidin was left off. Blood-letting is recommended in the beginning, and later strychnia and the constant current.

v. Mittelstädt.

Hansell (165) relates the case of a healthy man, thirty-nine years of age, who awoke one morning, seven days before the examination, absolutely blind. The pupils were irresponsive to light, media clear, optic papillæ slightly veiled, retinal vessels dilated, tortuous, and arteries contracted. The retina was not œdematous. There was no perception of light in either eye. Examination revealed no other bodily disturbance and no specific history. Under treatment with pilocarpine, mercury, nitroglycerine, and strychnine, light perception returned on the third day, and later ability to count fingers at several feet. After one month, the sight began to fail again, and the prognosis is unfavorable. The writer believes the lesion to be in or immediately in front of the chiasm.

Alling.

XXI.—INJURIES, FOREIGN BODIES, PARASITES.

166. **Vignes.** A foreign body of copper in the eye. *Bull. de la soc. d'opht. de Paris*, Jan. 8, 1901.

167. **Godlee.** Fall on the head, followed by optic-nerve atrophy and other symptoms. *Brit. Med. Journ.*, March 2, 1901.

168. **Page.** Hemianopsia from injury to the back of the head. *The Lancet*, Jan. 19, 1901.

169. **Swasey.** Destruction of the left eye and frontal lobe of the brain from shotgun explosion. *Boston Med. and Surg. Journ.*, March 7, 1901.

170. **Levy.** A contribution to the study of injuries of the eye. *Ophthal. Record*, March, 1901.

171. **Carpenter.** Ocular complications of injuries to the head. *Journ. Amer. Med. Assoc.*, Jan. 19, 1901.

In VIGNES's (166) case a foreign body of copper penetrated the cornea and lens, and was imbedded in the sclera. Notwithstanding the injury of the lens, no opacity resulted. A year after the injury, detachment of the retina came on, and later irido-choroiditis, which necessitated enucleation. BERGER.

GODLEE's (167) patient was a young man who had sustained an injury to the left side of the head by a fall from a bicycle. This was followed by paresis of the right side of the face and right upper and lower extremities, and deafness of the left ear, all of which improved. The left optic nerve became atrophic, causing blindness, while the pupil was inactive to direct stimulation.

PAGE (168) records the case of a boy aged fifteen, who was struck on the back of the head by a large metal advertising board. He was admitted unconscious, with a lacerated wound of the scalp running along the line of the lambdoid suture, but not quite reaching to the middle line. Brain substance was protruding, and he had been sick and had had general twitchings.

Several fragments of bone were removed which had been driven into the brain. The contused and lacerated brain substance was also removed, and the wound closed. The patient, in spite of his severe injuries, did well.

It was then found that there was blindness on the left half of both fields, implying loss of function of the right half of each retina. This state of things quickly passed off and vision became normal. MARSHALL.

SWASEY (169) removed a breech-pin and screw from the frontal region of the skull of a boy aged sixteen years. The eye was enucleated at the same time. There was no reaction and the patient lived four weeks without any discomfort, and then died of basilar meningitis. At the autopsy the frontal lobe was found to have been almost completely destroyed by the original injury.

ALLING.

LEVY (170) relates two cases. Case I. After a perforating wound of the cornea and lens, a strongly refracting spherical body was discovered in the centre of the lens. It was believed to be a bubble of air. It remained visible for six days. Case II. A man, sixty-three, after a wound of the conjunctiva, developed numerous nodules of yellow color in various parts of the sclera.

These disappeared under treatment with electricity. Examination did not show tuberculosis as might have been expected.

ALLING.

CARPENTER (171) reports two cases as follows: Case I. Man, aged thirty-six, after a blow upon the right side of the head, with slight general symptoms, began to develop defect of vision about the tenth day. In three weeks after the injury, a low grade of optic neuritis set in, with absolute central scotoma in both eyes. This remained permanent. He believes that the lesion was a degeneration of the axial fibres of each optic nerve as a result of traumatic shock. Case II. A boy of ten, with meningitis, showed paresis of left external rectus and levator palpebræ with left optic neuritis; hence he locates the lesion near the sphenoidal fissure.

ALLING.

XXII.—OCULAR AFFECTIONS IN GENERAL DISEASES.

172. **Hosch.** A case of so-called cortical hemianopsia and alexia. *Zeitschr. f. Augenheilk.*, v., 1.

173. **Mendel.** On ocular affections, and in particular visual disturbances, due to nasal troubles. *Centralbl. f. pr. Augenheilk.*, Feb., 1901.

174. **Enteneuer.** The prognostic significance of albuminuric retinitis. *Inaug. dissert., Giessen*, 1901.

175. **Laas.** On a case of transitory blindness after meningitis in a child of five years. *Klin. Monatsbl. f. Augenheilk.*, Feb., 1901.

176. **Murakami.** A contribution to the changes in the retinal vessels in leucæmia. *Klin. Monatsbl. f. Augenheilk.*, Feb., 1901.

177. **Plantegna.** On nervous disturbances of vision. *Ned. Tydschr. v. Geneek.*, 1901, i., No. 6.

178. **Nettleship.** Cases of congenital word-blindness (inability to learn to read). *Ophth. Review*, March, 1901.

179. **De Schweinitz.** A word concerning the etiological relationship of epidemic influenza to chronic glaucoma. *Annals of Ophth.*, Feb., 1901.

180. **Weeks.** Tumor of the brain with papillitis. Autopsy. *N. Y. Eye and Ear Infirmary Reports*, Jan., 1901.

181. **Risley.** Right hemianopsia, alexia, with partial temporary visual aphasia and amnesia, and amnesic color-blindness following an attack of influenza. *Amer. Journ. of Ophth.*, Feb., 1901.

182. **Dor.** Post-neuritic atrophy of both optic nerves due to mumps. *Amer. Journ. of Ophth.*, Oct., 1900.

183. **Zimmermann.** A case of left homonymous hemianopsia, probably hysterical. *Ophth. Record*, March, 1901.

184. **Ring, G. O.** Paresis of the external rectus associated with irregular tabes. *Journ. Amer. Med. Assoc.*, March 16, 1901.

HOSCH (172) describes a case of right hemianopsia with transitory alexia, due to a superficial focus of softening on the medial

surface of the left occipital lobe from plugging in the neighborhood of the point of bifurcation of the cortical branch of the posterior cerebral artery.

MENDEL (173) states that not only does the mucosa of the nose pass over directly into that of the eye and so transmit disease, but that there are various vascular connections between nose and eye. The ophthalmic artery gives off the anterior ethmoidal artery which supplies the side of the nose and the anterior portion of the septum, and a direct branch passes from the eye along the nasal duct. The veins of the nasal mucosa are connected through the lachrymal plexus with the ophthalmic veins.

Apart from affections of the tear-sac, cornea, conjunctiva, and lid margin, there are three chief conditions which frequently are due to diseases of the nose and accessory cavities, namely: (1) unilateral exophthalmus, (2) unilateral optic neuritis, and (3) unilateral phlegmon of the orbit.

The author presents several illustrative examples from Hirschberg's clinic.

ENTENEUER (174) discusses the prognosis of albuminuric retinitis. In the Giessen clinic, 38 cases were observed, and death was found to have taken place in 34; 26 died within a year after the first examination. Most of the patients died within three to six months. Within two years 30, or 88 %, died.

The statistics of previous writers as regards death within two years are as follows:

Stedman Bull	found	73 %	mortality.
Miles Miley	"	100 %	"
Trousseau	"	62.2 %	mortality.
G. Possaner	"	69.4 %	"
Hähnle	"	82.7 %	"
Leutze	"	68.5 %	"
Enteneuer	"	88.2 %	"

The average is 76.5 % of deaths within two years. In the albuminuric retinitis of pregnancy the prognosis is better.

LAAS (175) observed a transitory blindness in a girl of five, after meningitis. The fundus was normal, the pupils medium wide and responsive. The eyes rolled about without fixation, and the child could only distinguish light and dark. Later the child learned to fix, but the field was small and orientation difficult. Three weeks after the onset of blindness the child went about as before. Affections of the optic nerve after meningitis

are not rare. In the present case there had evidently been only a functional disturbance of the cortical visual centres. In the diminution of vision, small field, and difficulty in orientation, the case resembled those of children that become blind after long-continued blepharospasm, and then gradually acquire normal vision.

MURAKAMI (176) made a microscopic examination of the eyes in a case of leucæmia. The leucocytes were enormously increased, both inside and outside the vessels. They were arranged particularly about the vessels, but also scattered diffusely, with and without the mixture of red corpuscles. The vessels were mostly widely dilated and filled for the most part with white blood corpuscles. There were numerous miliary varicosities, surrounded with leucocytes; their walls were either thickened or scarcely to be distinguished in the groups of leucocytes. Thrombosed varicosities, with endothelial proliferation, and also obliterated vessels, were found. Hemorrhages were found in all layers of the retina, flattened in the nerve-fibre layer, and in irregular clumps in the deeper layers. Once a vessel wall was found to be torn.

As regards the development of foci of leucocytes, the writer believes that the typical picture may be represented by a plugged varicosity, which is surrounded by leucocytes that have escaped from it in such number that the wall can be recognized only with difficulty.

PLANTEGNA (177) has observed 54 cases of nervous and 3 cases of traumatic amblyopia in soldiers. In almost every patient evidences of manifest or latent hysteria were found.

Smell, taste, and hearing often suffered, sometimes on one side, sometimes on both; pareses were found several times.

In a third of the cases there were hysterical zones. The amblyopia was mostly bilateral and of moderate degree, with constant contraction of the field and an inversion of the color fields in two-sevenths of the patients. Anæsthesia of the conjunctiva was sometimes found. Symptoms of irritation were more frequent than symptoms of paralysis in the neighborhood of the eye. The pupil was of normal size and reaction. JITTA.

NETTLESHIP (178), in this paper, draws attention to cases in which there is inability to recognize words when seen in print. Some of these patients have also difficulty in learning figures by sight, although they are generally sharp enough in remembering

things that they have heard. Thus, some of the patients whose cases have been recorded could count or say the alphabet, and yet had the greatest difficulty in reading even short words. He records 5 cases of his own and reports 4 others, and it is noticed that 8 of them were males.

He considers them due to faulty development of some of the cerebral centres. As, however, many of the cases become considerably improved, it is very important to recognize them early, so that special attention should be directed to this defect in the early education of the child.

De Schweinitz (179) offers a case as suggestive of the relation of chronic glaucoma to influenza. A woman, fifty, had suffered from a severe attack of influenza, with a relapse. The right eye showed discoloration of the lower half of the disc—arteries small and veins full. Field of vision limited to a 2-*cm* square in the upper nasal quadrant. Diagnosis: retrobulbar neuritis. Seven months later, shallow anterior chamber, but normal tension. Disc showed a large excavation and is gray in color. Visual field slightly contracted up, in, and out with oval central scotoma. V = $\frac{6}{20}$. Such conditions, with added tension of the globe, would constitute chronic glaucoma. It appears that retrobulbar neuritis, so commonly produced by influenza, may be the starting-point of a glaucomatous excavation of the nerve head.

Alling.

Weeks (180) reports the case of a woman, forty-eight, with good history, who had suffered from indigestion and epileptic seizures for the year previous. There was severe headache, general, occipital, and frontal. Papillitis was found in both eyes, with R V = $\frac{1}{200}$; L V = 0. Later spasmodic conjugate deviation of the eyes to the right. The patient died in coma. The optic nerve presented ampulliform enlargement back of the globes. A tumor of cone-shape was found on the left side, with a base 5 *cm* in diameter, extending from the retrocentral sulcus to the anterior occipital sulcus, and from the intraoccipital fissure to the margin of the temporal lobe. The apex was in the vicinity of the third ventricle. The tumor proved to be a round-cell sarcoma.

Alling.

Risley (181) relates the case of a man, fifty-five, who was attacked with severe hemicrania, accompanied by elevated temperature and rapid pulse. He soon became unconscious, and remained so for three days, vomiting constantly. He gradually improved,

but suffered from mind-blindness to the extent of rendering reading difficult or impossible. He showed absolute right hemianopsia with contraction of the remaining field. The ophthalmoscopic appearances were those of retrograde neuritis. He partially recovered on increasing doses of potassium iodide.

ALLING.

ZIMMERMANN (183) reports the case of a young woman of thirty-five, who was subject to epileptoid seizures, and was admitted to the hospital while suffering from repeated convulsions. The eyes showed right homonymous hemianopsia with contraction of the remaining field. No changes could be found in the examination of the eyes. At the end of one month this symptom had disappeared. The association of her attacks with delayed and painful menstruation and the complete cure by appropriate treatment make the diagnosis of hysterical hemianopsia justifiable.

ALLING.

RING'S (184) patient, for a period of two years, manifested a series of paretic attacks of the left external rectus. The knee-jerks were present during most of the time, but various foci of degeneration were localized in the sacral cord, with numbness of the face and laryngeal crises. Although there was a history of syphilis, treatment was of no avail, excepting, perhaps, chloride of gold and sodium.

ALLING.

BOOK NOTICES.

I.—**Report of the Cambridge Anthropological Expedition to Torres Straits.** Vol. II., Physiology and Psychology. Part I., Vision. By Dr. H. R. W. RIVERS. Cambridge University Press, 1901. Quarto, pp. 140, illustrated.

In May, 1901, an article appeared in the *Popular Science Monthly* on primitive color vision, in which Dr. Rivers discussed the old Gladstone idea that primitive peoples must have acquired perception of blue much later than perception of red because the terms used by early writers like Homer were not definite as regards the colors of the blue end of the spectrum. From his studies among the natives of Torres Straits and New Guinea, speaking four different languages, Dr. Rivers concluded that there is at least an evolution of color language, and that among such peoples there is certainly insensitiveness to blue.

In the present monograph he discusses in detail the results he obtained as regards acuteness of vision, color vision, and visual spatial perception among these peoples. In an historical introduction he says: "The first exact observations on visual acuity from the ethnographical standpoint were made in the American army in 1865. . . . It was found that the white soldiers could read a given type at 47.77 inches; full blacks at 45.33; mulattoes at 47.23, and Indians (Iroquois) at 51.77 inches. The average Indian was slightly superior, and the average negro slightly inferior to the average white man, but not in any marked degree." The highest acuteness of vision recorded seems to have been in the Kalmuks, seventeen of whom, examined by Kotelmann, had average vision of 2.7 and one man of 6.7 times the normal. Dr. Rivers examined 169 persons of various ages and found an average acuteness of vision of $\frac{10.6}{8}$. He concludes that myopia is rare among savages and the semi-civilized, and that the acuteness of

vision of these peoples is superior to that of the normal European, though not in a marked degree.

Tests in the matching of colors showed that green and blue, and blue and violet were often confounded, and tests in the naming of colors "showed that defect in nomenclature for a color may be associated with defective sensibility for that color, and so far lend some support to the views of Gladstone."

In the concluding section the author compares the results of tests for binocular vision, the estimation of distance by the eye, the accuracy of division of lines into two, three, or more equal parts, etc., with tests made on civilized peoples, and finds that the results were rather more accurate in the savages. W. A. H.

II.—**Traité des tumeurs de l'œil, de l'orbite et des annexes.** Par le Dr. FELIX LAGRANGE, professeur agrégé à la faculté de Bordeaux, etc. Vol. I., tumors of the eye. With 202 figures in the text and 18 plates. Large octavo, pp. 877. Paris: G. Steinheil, 1901.

The tumors of the eye have been the subject of several monographs, more or less extensive in scope, such as those by Knapp, Fuchs, Brière, and Lagrange; but the latter author now aims to be exhaustive, and his new book contains illustrative histories and drawings selected from various sources, with many cases of his own, a thorough discussion of the literature, and a complete bibliography of the subject, all systematically arranged, well indexed, and admirably gotten up. The book is to be commended for its lucidity and its completeness. The second volume will deal with the tumors of the optic nerve, orbit, and appendages of the eye.

W. A. H.

III.—**Stereoscopic Photographic Atlas of the Pathology of the Eye.** By Prof. A. ELSCHNIG, Vienna. Parts I. and II., 32 6 x 3½ inch charts, with descriptive text. Leipsic and Vienna: Braumüller, 1901.

Photographs of Priestley-Smith preparations have always been failures for the purposes of illustration or demonstration. Drawings of divided eyes in jelly or liquid have sometimes been fairly successful when dark shadows have been used to produce a plastic effect, and render the details intelligible by throwing them into relief; but the effect of these heliotype reproductions of photographs when placed in the ordinary stereoscope is surprising, and the interest which these representations of the commoner pathological

states of the eye will excite should render them exceedingly valuable for instruction. W. A. H.

IV.—**Contributions to the Comparative Anatomy of the Mammalian Eye, chiefly Based upon Ophthalmoscopic Examination.** Part I. By GEO. LINDSAY JOHNSON, M.D., F.R.C.S. Philosophical Transactions of the Royal Society of London. London, 1901.

This is a folio of 82 pages of text and 30 plates of backgrounds wonderfully executed in color. The descriptive part records observations as to the appearance of the fundus oculi by means of the ophthalmoscope in 182 species of mammals examined by the author with astonishing energy and perseverance, sometimes not without danger from wild animals in Zoölogical Gardens, in cages of venders, etc. In colloquial parlance, we would say to undertake and carry out to a successful end such a work required the enterprising, painstaking, indomitable, and enthusiastic nature of an Englishman. The Philosophical Transactions of the Royal Society of London, that marvellous storehouse of English science and genius, faithful to their old glorious traditions, have done the typographical part in an unexcelled manner. No ophthalmoscopic atlas has more beautiful plates than those of Johnson. To behold, study, and analyze them is not only a scientific gratification, but an unusual æsthetic enjoyment. As to the contents of this first part of a projected larger work, we may add: The 182 species of mammals examined fall under 103 genera and 47 families, only two being omitted—the Cetacea and Sirenia. The refraction of the animals, the divergence of their optic axes, their irides, pupils, and other features are likewise described.

The work is a delight to the reader, an honor to the publisher the Philosophical Transactions which fathered it, and a monument to the author. H. K.

V.—**Allgemeine Theorie der Monochromatischen Abweichungen und ihre nächsten Ergebnisse für die Ophthalmologie.** (General Theory of Monochromatic Aberrations and their Applications in Ophthalmology.) By ALLVAR GULLSTRAND. Upsala, 1900.

This monograph of 204 folio pages of the well-known Swedish author, distinguished chiefly by his labors in practical and theoretical optics, treats of an important physiological and ophthalmological subject in the strictest mathematical manner, namely,

the fundamental optical conditions of the human eye, in elaborate demonstrations, making abundant use of analytical geometry and differential and integral calculus. It will require another pen to make the results of these highly scientific investigations available for the oculist of average intelligence and erudition. It is a pity that the teachers who dwell on the pinnacles of glory cannot command numerous audiences, for the higher the science the less popular it is. Yet the pioneer that shoots over the heads of the present generation will hit those of the next.

H. K.

VI.—**An American Text-book of Pathology.** Edited by LUDWIG HEKTOEN and DAVID RIESMAN. With 443 illustrations, 66 of them in colors. Large octavo, pp. 1245. Philadelphia and London. W. B. Saunders & Co, 1901. The section devoted to the eye—42 pages with 38 original illustrations—was written by WARD A. HOLDEN, and that devoted to the ear—14 pages—by JAMES A. SPALDING.

The different headings are: A brief review of the embryology of the eye, *i. e.*, the development, histology, and blood-supply of the various structures. The conjunctiva: the bacteriology of the different diseases. The chronic neoplastic inflammations: trachoma, chalazion, tumors. The cornea: infiltration; ulcer and its varieties and stages; serpent ulcer, or hypopyon keratitis. The sclera. The uveal tract: irido-cyclitis, choroiditis, sympathetic ophthalmia, tuberculosis of the iris. The retina: metastatic retinitis, nephritic retinitis, detachment of retina; tumors, in particular glioma; the latter has been thought to belong in the category of sarcoma, but Golgi's stain shows it to consist of neuroglia tissue. The optic nerve. Furthermore, coloboma, glaucoma, the lens with the different kinds of cataract, the vitreous, and foreign bodies and parasites. All this represents the work of the newest and most advanced investigators, among whom, as our readers well know, the name of the author is also to be found. This chapter, as well as the somewhat shorter one of Dr. James A. Spalding on the ear, should induce many of our brother specialists to place the whole work on their shelves in order to keep up with this all-important branch of medical science—pathology.

H. K.

Obituary.

I.—On the 18th of November, 1901, Dr. **William Fisher Norris,** Professor of Ophthalmology in the University of Pennsylvania, died of pneumonia in his home in Philadelphia. Dr. Norris was the son of Dr. George W. Norris, one of Philadelphia's most distinguished surgeons, and was born in that city on January 6, 1839. His collegiate education was acquired in the University of Pennsylvania, from which institution he was graduated with the degree of A.B. in 1859. In 1860 he received the degree of A.M., and in 1861 that of M.D. After two years' work as Resident Physician in the Pennsylvania Hospital, he entered, in 1863, the service of the United States Army as assistant-surgeon during the Civil War, and in 1864 had charge of the Douglas General Hospital in Washington, continuing in the service of the Army until 1865. At the conclusion of the war Dr. Norris went to Europe for the purpose of pursuing the study of ophthalmology, and occupied his time chiefly in Vienna, working under the direction of Ferdinand Arlt and Frederic Jaeger, and also in the Pathological Institute of that city with S. Stricker. At this time and in subsequent years he was a visitor and student in various German clinics and also in Paris, always adding to his knowledge of that branch of medicine in which he afterwards became so distinguished. On his return to this country he quickly put into practice the lessons learned from the European masters, and almost at once he acquired a foremost place in that group of men who thirty years ago gave the impetus to American ophthalmic work which has secured for it the honorable position it now holds. With Ezra Dyer, William Thomson, and others, he devoted much attention to the relation of errors of refraction to headache and various reflex nervous disturbances—a subject to which special attention had

been called by the writings of S. Weir Mitchell. In 1871 he was elected Surgeon to Wills Eye Hospital, a position which he held until a few months before his death, and in 1876, Clinical Professor of Ophthalmology in the University of Pennsylvania. In 1887 he became full Professor of Ophthalmology in the same institution and maintained this connection with it until the end of his life. He was a Vice-President of the Pathological Society of Philadelphia, President of the American Ophthalmological Society from 1885 to 1889, Fellow of the College of Physicians of Philadelphia, and for several years President of its Ophthalmic Section, member of the American Philosophical Society and of the Academy of Natural Sciences, and one of the founders of the University Hospital and for years President of its Board of Managers. In 1873, Dr. Norris was married in Vienna to Fraulein Rosa C. Buchmann, who died about five years ago. They had three sons, two of whom survive, one, George W. Norris, being a physician, and the other, William Felix Norris, a law student in the University. In 1899, Dr. Norris married Miss Annetta C. Earnshaw, of Gettysburg, Pa., who survives him. Dr. Norris was the author of many notable contributions to ophthalmic literature, among which should be mentioned: "Versuche über Hörnhautentzündung," in 1869, in collaboration with Prof. S. Stricker; a number of papers on "The Retinitis of Bright's Disease," and "Optic Neuritis in Intracranial Tumors," 1874–1881; "Investigations of Double Staining in Microscopic Work," in collaboration with Dr. E. O. Shakespeare, 1877; "Hereditary Atrophy of the Optic Nerves," 1884; "Association of Gray Degeneration of the Optic Nerves with Abnormal Patellar-Tendon Reflexes"; "Anatomy of the Human Retina, with Special Consideration of the Terminal Loops of the Rods and Cones," in collaboration with Dr. James Wallace, 1894, 1895; and numerous other papers on ophthalmological topics, published chiefly in the *Transactions of the American Ophthalmological Society*. Among his major publications are the following: "Medical Ophthalmology," in *Pepper's System of Medicine; A Text-Book of Ophthalmology*, with Dr. C. A. Oliver in 1893; and *A System of Diseases of the Eye*, by American, British, Dutch, French, German, and Spanish authors in four volumes, edited in collaboration with Dr. C. A. Oliver. His personal contribution to this *System*, the first volume of which appeared in 1897 and the last in 1900, was a scholarly article on "Diseases of the Crystalline Lens."

Dr. Norris trained many young men in his chosen specialty, a number of whom now hold positions of high merit; indeed, he may be said to have had a following which represents a distinct school of ophthalmology. The habits of his army life never deserted him; he was precise, prompt, and at times peremptory, but always just. As a clinician, a teacher, and an operator, his work was characterized by singular accuracy and thoroughness. Careless generalizations and superficial diagnoses were foreign to his nature; his methods always were conscientious and searching. He strove in special lines, but he never forgot or failed to apply his wide knowledge of the principles and practice of general medicine and surgery. Dr. Norris was the type of an ethical doctor, an honest, earnest, scholarly man, a lovable gentleman. He worked well and faithfully; his example remains to be followed with serene confidence. G. E. De Schweinitz.

II.—Prof. **Arthur König,** late assistant of Helmholtz, then director of the Physiological Institute, died in Berlin in his forty-sixth year. He was the chief editor of the second edition of Helmholtz's *Physiologische Optik*, and the founder and editor of the *Journal of the Psychology and Physiology of the Organs of Special Sense*, a periodical of a high scientific order.

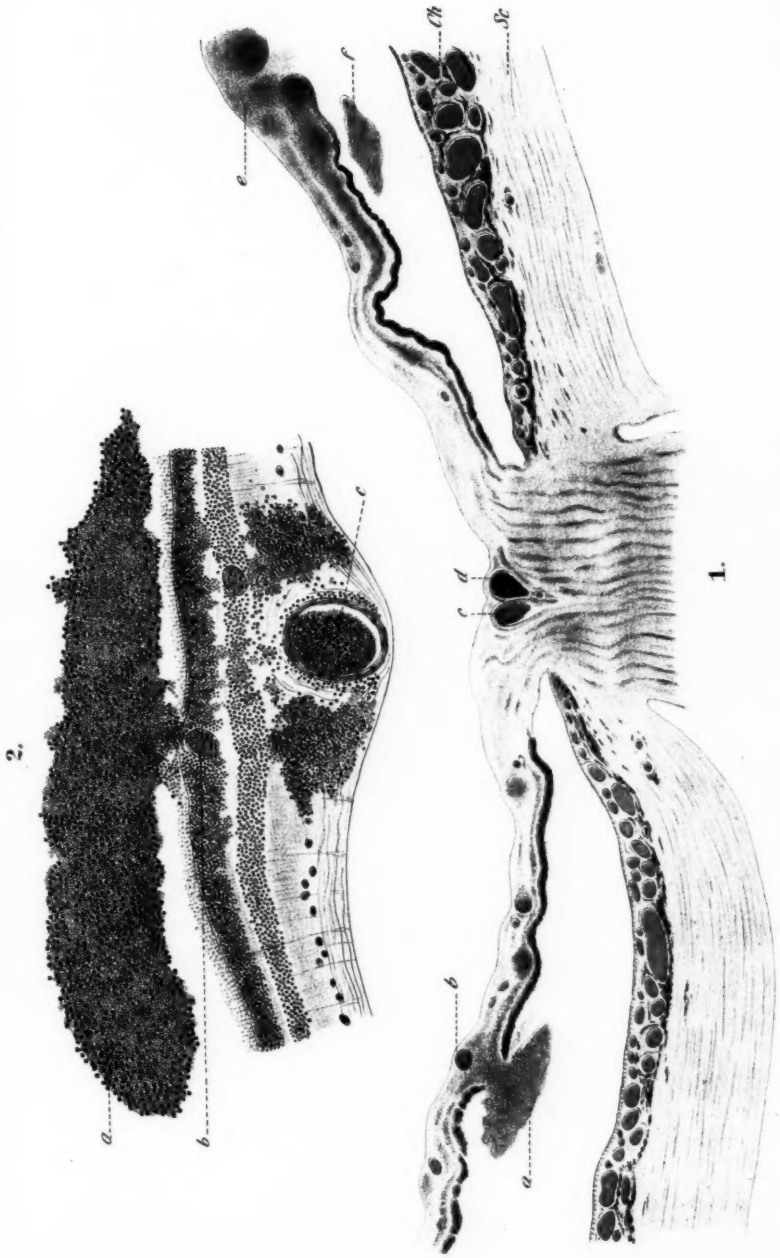
APPOINTMENTS.

Professor Hjort, in Christiania, has resigned his professorship. His successor is Dr. Schiötz.

Prof. Peters, at Bonn, has been appointed professor-in-ordinary of ophthalmology at the University of Rostock, to succeed Prof. Axenfeld, who, in his turn, succeeds Prof. Manz at Freiburg, resigned.

Dr. Paul Römer has been appointed privatdocent at the University of Würzburg, Dr. Ziegler-Huguenin the same at Zurich, and Dr. Rosalino at Pisa.

Prof. Richard Greeff, has been appointed Executive Surgeon (Director) of the newly established Clinic for Eye patients in the Charité-Hospital in Berlin. *Deutsche med. Wochenschr.*, Oct. 31, 1901, p. 776.



Dr. Löwenstamm del. C. Krapf, lith. Verlag von J.F. Bergmann, Wiesbaden.